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Journal

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Creative Thinking[1]

JAMES B. BOULDEN, Ph.D.

Assistant Dean,
School of Business Administration,
University of California,
Los Angeles

THE STATED objective of The American Dietetic Association nicely points up the importance of creative thinking: "To *improve* the nutrition of human beings; to *advance* the science of dietetics and nutrition; and to promote education in these and allied areas."

Obviously, improvement and advancement of the science can come in only one way—through creative thinking.

Consider the potential for improved techniques of feeding and the conversion of existing foods into more nutritious substances. Certainly in recent years we have witnessed remarkable advances in every phase of food preparation and consumption. Better foods have been developed through hybridization and improved processing. Important dietary supplements have been developed. But you are much more versed in these matters than I; suffice it to say that we stand on the threshold of great new discoveries and developments in your field. The magic key required to unlock the door of treasures is creative thought.

Unfortunately, in many of our institutions, bureaucratic procedures have had the effect of frustrating the thinking individual. Mental resources of the industry have scarcely been tapped; we find most managers and employees working at a fraction of their intellectual potential. It is well to remember that the productivity of a firm may be as greatly increased by many people each making small creative contributions as by a handful of managers providing occasional flashes of genius.

Creativity is essential for survival in the changing world in which we live. Americans have traditionally prided themselves on their resourcefulness and imagination, but there is considerable evidence indicating that strong forces are at work in the economy today which encourage conformity to accepted patterns of behavior. The strong drive to conformity hampers not only individualistic behavior, but also inhibits originality. Many of us tend to let the "system" think for us rather than using our own minds and imaginations. To prevent the loss of our greatest resource—the creative individual—it is becoming increasingly important that we study the nature of the creative process. We *must* realize the creative potential which lies within each of us to a greater or a lesser degree.

The Nature of Creativity

Creative decision-making is a special form of problem-solving behavior which is characterized by departure from the conventional—a modification or rejection of accepted concepts. This is to say that we are concerned with unique and uncommon solutions to a problem. These creative solutions must be "rational." Quite often an accident may occur which will lead to the culmination of an idea; however, these are only accidents in context. Only through rational thinking can one recognize the "happy accident" and apply it to his idea. The creative thought is the product of an intellectual process.

Webster defines "create" as follows: "To bring into being; to cause to exist. Hence, to invest with a new form, office, or character; to constitute. To produce as a work of thought or imagination." Imagination, we find, involves the "formation of mental images of objects not present to the senses, especially of those never perceived in their entirety; hence, mental synthesis of new ideas from elements experienced separately." This definition stresses the role which imagery plays in the creative process.

We must further define a creative idea as one which has some relation to reality so that it possesses a potential for productivity. We thereby eliminate from our definition such an activity as daydreaming, which certainly involves imagination, but which holds little promise of utility in our society.

Judgment as a Barrier to Creativity

Decision-making requires determining a course of action by first identifying alternatives and second by evaluating their consequences. The evaluation of alternatives introduces a most important aspect of thinking—that of judgment. Judgment, according to Webster, is "the operation of the mind, involving

[1]Presented at the 42nd Annual Meeting of The American Dietetic Association in Los Angeles, on August 26, 1959.

comparison and discrimination, by which knowledge of values and relations is mentally formulated." Judgment is a verdict, a conclusion.

Alternatives must exist before judgment can take place. These alternatives may come from previous organization practice when decisions are made on the habit level, or they may come from empirical observation or creative thought, depending on the level of thought.[2] We should be aware that judgment can hinder creativity if it comes prematurely. Creativity should be able to work freely in identifying new and unique alternatives before judgment becomes active in selecting from among these alternatives.

Perhaps we could take an example from the composer who allows his fingers to roam at will over the keyboard, or the artist who makes numerous "doodlings" without attempting to evaluate results as a means of stimulating creativity. We must actually tap the subconscious before calling on judgment. However, the role of judgment, in creativity, cannot be discounted as it is always necessary at some point to adapt creative thought to reality.

The Creative Process

It is interesting that many philosophers through the centuries have examined the phenomenon of creativity with generally the same results. To an amazing degree, these men have reached agreement as to the nature of the steps involved in the creative process. The following framework is representative (2):

(a) Sensing (recognizing the problem). Problems cannot be solved without first recognizing the area requiring creative effort. The problem must be clearly defined and the objectives established. At this point, it may be advisable to divide the problem into a number of sub-problems for consideration.

(b) Preparation (gathering data pertinent to the problem). For the most part, creative decisions do not materialize out of thin air. Long, hard work is required in gathering the raw materials from which ideas originate. Preparation involves much more, however, than systematic research and mere accumulation of data. Osborn presents (3) a most important aspect of preparation when he stresses the phenomenon of association.

Reference to our previous definition of imagination will reveal the importance of association in the fulfillment of imagination. Recall that imagination is contingent on synthesis of new ideas from elements experienced separately. A famous painter in discussing his creative experience, stressed the preparatory stage of creativity in which he acquired new visual experiences, reviewed the work of other artists, and so on. This is the raw material with which his imagination associates creative ideas.

The remark has been made that there is "nothing new under the sun," and to some degree, this is certainly true. Creative thoughts are usually new and unique combinations of existing elements. Consider how many songs can be played on the same piano by using alternative combinations of the same notes. This is one reason that the "instinct for combinations" or the ability to associate is so important in creative thinking.

(c) Incubation (mulling over the idea). Incubation is characterized by free thinking and involves consideration of all relationships and repression of judgment. Much of the incubation process takes place in the subconscious mind and continues even when we are playing, sleeping, or eating and performing our other daily activities.

(d) Illumination (recognizing the possible solution). The creative inspiration often comes seemingly out of the blue. Ideas may come in great proliferation in a short period of time and should be written down since they may not come again to the conscious mind. This is the point in the creative thinking process where ideas which have been generated in the subconscious mind during the incubation period are submitted to consciousness.

(e) Verification (testing the proposed solution). The last stage in creative thinking is often called the "morning after." Here judgment becomes important in determining the value of creative ideas. Ideas may need to be modified or rejected, or proved through logic or experimentation. If judgment rejects the creative thought, the cycle may then revert to an early state in the creative process with additional definition of the problem, accumulation of more information, and further incubation.

Creativity Prerequisites

Many psychologists hold that there are definite aids to creativity; however, individual differences and talents must be considered. Guilford of the University of Southern California has tentatively identified (4-7) the personal abilities he considers important in creativity. The extensive research conducted by Professor Guilford and his associates has provided valuable insight into the nature of the creative process.

(a) Sensitivity to problems. The ability to see defects, needs, and deficiencies.

(b) Penetration. The ability to see problems which are not immediate or obvious.

(c) Associational fluency. The ability to produce words from a restricted area of meaning.

(d) Originality. The ability to produce remote, uncommon, or clever responses.

(e) Judgment. The ability to make wise choices in a somewhat ambiguous situation when it is nec-

[2]Jarman has identified (1) three main levels of thinking as: (a) the habit level, (b) the problem-solving level, and (c) the creative or insight level.

essary, in general, to make assumptions over and above the facts that are given.

(f) Spontaneous flexibility. The ability to produce a diversity of ideas.

Obviously, many of these abilities can be developed through proper training. We no longer believe that "you either have it or you don't," but rather that every person possesses a certain creative potential and that his ability in this area can be greatly improved through appropriate guidance.

Conditions Conducive to Creativity

Environmental conditions are also important to creativity. A receptive atmosphere must exist for creative thoughts and feelings to grow. If one is to be creative, he must not be afraid to try new concepts; he should be highly motivated to creative effort and allowed freedom to fail. The very fact that creative thoughts are new and unique means, almost by definition, that a much higher number of them will meet with failure than if established procedures are used. Thus organizational restrictions, such as systematization and procedures, can be a definite hindrance to creativity.

There must be adequate rewards for individuals who are creative. The individual must free himself from conditioned thoughts and habits and adopt a questioning approach to the problems he faces. He must have adequate information from which to construct creative thoughts. Rigid controls must be absent to allow departure from traditional modes of behavior. The creative thinker requires time to develop ideas and must be given an environment free from work pressure with opportunity to think.

In the light of the previous discussion, we can see that many of the conditions conducive to creative thinking are contrary to the philosophy of "scientific management" with its stress on efficiency, specialization, and systematization. We are well aware of the economies and efficiencies that arise out of systematizing work and in providing for high specialization. However, to some degree, these efficiencies may be misleading in that they relate only to the present. The real effectiveness of your profession tomorrow may be determined by the freedom to think creatively today.

Techniques for Producing Ideas

A number of devices have been developed for stimulating creativity. Unfortunately, these valuable techniques have, to some degree, become a fad in recent years, much like reducing diets, with the result that they have been somewhat oversold and their values misrepresented. It is important to understand that they are only techniques, and while highly useful in certain situations, they can in no way be depended on to produce creative ideas automatically. The following are examples:

THE GORDON TECHNIQUE. Developed by William J. J. Gordon of Arthur D. Little and Company, the objective of this technique is to develop a completely new idea. Only the group leader knows the exact nature of the problem to be solved. An area of discussion is introduced which is in some way related to the actual problem; the group responds with a "rapid fire" presentation of new concepts. The initial ideas are later developed into a finished product through evaluation and judgment. The success of the Gordon technique depends largely on the skill of the leader and the selection of the topic; however, it has the advantage of going back to more basic knowledge than the other techniques and coming up with more radically creative ideas.

FORCED RELATIONSHIPS TECHNIQUE. In this technique, lists of items are related to one item, or to alternative lists of items. The principal uses of this method are not to solve specific problems, but to arrive at new concepts and ideas. Reference is often made to extensive lists, such as the telephone directory or a department store catalogue, and an attempt is then made to force a relationship between the various items on the list. One practical disadvantage of this technique is that it is quite time-consuming; however, it does make extensive use of the "association" concept by which one item stimulates a new but related thought.

BRAINSTORMING (formalized and titled by Alex F. Osborn while Vice President of the advertising firm of Batten, Barton, Durstine and Osborn). In brainstorming, a subject is introduced to the group, and the participants respond with everything that comes to their mind. They are encouraged to produce all such thoughts, making no attempt to pass judgment on the ideas. The technique aims at producing a large volume of ideas on the expectation that wild and impractical thoughts may provide the stimulation for very useful ideas. After the session is over, the ideas are subject to extensive study, often by a different group from that involved in the brainstorming session.

ATTRIBUTE LISTING (developed by Robert Crawford of the University of Nebraska). All of the qualities and attributes of a problem or problem situation are listed, and then each is systematically considered in an attempt toward improvement. Ultimately, each problem is sub-divided into smaller areas, with each area attacked and solved separately. Finally, the solution to the whole problem is reached by virtue of putting the answers to the small problems together.

CREATIVITY CHECK LIST. This method was also developed by Alex F. Osborn (3). The list consists of questions that one can ask himself when attempting to arrive at a new idea:

Put to other uses? New ways to use as is? Other uses if modified?

Adapt? What else is like this? What other idea does this suggest? What could I copy? Whom could I emulate?

Modify? New twist? Change meaning, color, motion, sound, odor, form, shape? Other changes?

Magnify? What to add? More time? Greater frequency? Stronger? Higher? Longer? Thicker? Extra value? Plus ingredient? Duplicate? Multiply? Exaggerate?

Minify? What to subtract? Smaller? Condensed? Miniature? Lower? Shorter? Lighter? Omit? Streamline? Split up? Understate?

Substitute? Who else instead? What else instead? Other ingredient? Other material? Other processes? Other power? Other place? Other approach? Other tone of voice?

Rearrange? Interchange components? Other pattern? Other layout? Other sequence? Transpose cause and effect? Change pace? Change schedule?

Reverse? Transpose positive and negative? How about opposites? Turn it backward? Turn it upside down? Reverse roles? Change shoes? Turn tables? Turn other cheek?

Combine? How about a blend, an alloy, an assortment, an ensemble? Combine units? Combine purposes? Combine appeals? Combine ideas?

Gaining Acceptance

We often find a resistance to new ideas and to change because those affected feel that their security is threatened. New ideas often demand new behavior patterns and may introduce new skills in which older employees are not proficient. For this reason, it is important that the affected workers have at least some participation in making the change and be supplied with sufficient information concerning the benefits and the nature of the change to be made. Creative concepts must often be introduced slowly to allow others to adjust to the new ideas. Communication is all important, and care must be taken to supply those concerned with an understanding of the rationale behind the improvement.

Summary

Creative thinking holds tremendous potential for advancement in the science of dietetics and nutrition. In fact, creative thinking is the *only* way such improvements can accrue. It is generally agreed that creativity takes place through a definite process involving sensing the problem, preparation of raw data, incubation, illumination, and verification. This process can be stimulated through numerous techniques as enumerated in this paper. However, in the final analysis, we must recognize that many creative thoughts are lost to the world because they are met by unreceptive audiences. The enemy of creativity is the individual who thinks only in terms of the tangible and the immediately efficient and whose viewpoint is limited to the present without vision into the future.

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Estrogens in Plant Food

The sterility in sheep in certain areas in Australia was found to be due entirely to the ewes fed on pasture of clover containing "a very powerful oestrogen known as genistein." Sir Charles Dodds said that this substance "is present in practically all vegetables and in grasses." He added: "There is no doubt that a considerable amount of oestrogen is consumed in the food in this form. We shall have to consider, when we think of oestrogens and oestrogen metabolism in the human subject, the sort of oestrogenic background we get in our food from this and similar types of substances.This work is not very well known in this country [Britain], but a number of surveys are now being made into the distribution of such oestrogens in vegetable foods. We know little or nothing about the metabolism of these substances but it would appear that they have the same stability as stilboestrol in the body."—*Abstracted from J. Obst. & Gynaec. Brit. Emp. 66:792, 1959. Contributed by M. Bertha Brandt, Research Assistant, The Chicago Lying-In Hospital, University of Chicago Clinics.*

From Relegation to Delegation[1]

MILTON GORDON, Ph.D.

San Fernando Valley State College, Northridge, California

WHEN A PSYCHOLOGIST or sociologist working for business or industry enters an organization, he is likely to start out by sensing, so to speak, the personality structure of the group. Businesses have personality just as do the individuals who make them up. In fact, the organization personality is usually a direct reflection of a few key individuals. The influence of a president, manager, or supervisor is grossly underestimated. We, who have key responsibilities, are obligated to assess our own and the group personality which we are nurturing.

One of the most significant elements which contributes to this personality structure is the process of delegation. A relatively quick appraisal of who is doing what will provide a variety of clues about any business effort. In recent weeks I have met with the man who directs the manufacturing operations for a company of over 20,000 employees who feels no qualms about changing orders to a machine operator. I have argued with the president of a company who spent much of his time on the drawing board in product design. Neither of these men realized what effects they were having on their companies and their staffs. They worked to death the cliché, "If I don't do it, nobody will." These men are perhaps examples of extreme cases of what we might call "relegation."

Relegation, Delegation, Abdication

We might look on this behavior as existing in relative degrees from relegation to delegation. At the one end, the manager relegates himself to a lower level job where he is "doing" rather than "developing." He relegates his subordinates to a kind of purgatory where they are labeled by both superior and fellow worker as being inadequate on the job—and who wants to be so brazenly identified, whether it be true or not?

Near the other end of the scale is the delegator. One who has defined his job and those of the other members of the group. He expects that he will be held accountable for certain behavior and also sets appropriate expectations for his people. Interestingly enough, both the relegator and delegator know which behavior is most desirable. However, such knowledge is not enough.

There is an even more extreme position than delegation on this continuum. It might be called abdication. This situation exists where the manager resigns from his responsibility as a decision-maker. He tolerates any and all action as long as it is carried out by someone else. The task of most of us is that of learning how to grow from relegation to delegation without slipping into abdication.

What is most pitiful about this problem is that the "do-it-yourself" man deludes himself by pointing out that "At least I get the job done. So I work a little harder—maybe a lot harder. Nobody gets hurt and the job is done the way it ought to be done." The tragedy is that often many are hurt and the job might have been done much better.

Studies of management (1) consistently demonstrate that:

(a) The delegator has a more productive work force.

(b) Delegation and high morale are positively correlated.

(c) Delegation results in more improvements in methods and procedures.

Why We Resist Change

No manager is opposed to greater efficiency, higher morale, and better methods. Yet, we find in many cases an almost bitter resistance to change. Perhaps these individuals who consciously resist change are not as hopeless as the majority of us who pride ourselves on having an open mind while we conveniently seek out evidence which will help us to rationalize our behavior. Why do we behave in such a manner?

There are probably a number of reasons. It is the obligation of every manager to conduct a self-evaluation to determine the nature of and reasons for the delegation he employs. He might ask himself:

[1]Presented at the 42nd Annual Meeting of The American Dietetic Association in Los Angeles, on August 26, 1959.

(a) Am I a victim of habit? Many of us just become accustomed to a way of doing things and eventually it becomes the only way.

(b) Do I involve myself because it is easier for me? Participating in routine activities is much less arduous than the managerial tasks of planning, organizing, coordinating, and controlling. It's really *easier* to be so swamped with the immediate job that you can think of nothing else.

(c) Do I need to feel swamped? Some individuals actually feel guilty if they are unable to give the impression that they have more work than any one person can possibly accomplish. When things ease up, they involve themselves in work which others might better accomplish alone.

(d) Am I too lazy to train others? The excuse that "I just don't have anyone who can do it" may be true. However, one can justify such a remark for only a limited period of time. From then on, he is remiss for either failing to have hired competent people or abrogating his training responsibility. With all the professional agencies available to assist in individual development, there is little excuse for an untrained staff.

(e) Am I a perfectionist? Are the standards I set reasonable? It is ridiculous to assume that every job should be done as well as you might be able to do it. The manager *ought* to have a broader understanding and knowledge than that of subordinates. When employees know and can do as much as their superior, then they are in the wrong job—unless, of course, the manager himself is short in knowledge and technique.

(f) Do I let my own insecurity affect delegation? Some of us avoid the act of delegation for fear we will expose our own limitations. Others feel more secure in hiding some of the trivia in which we are engaged. A few are afraid their power will be usurped, while others project their own insecurity by expressing a distrust of their associates. We all have some feelings of insecurity, and many of them may be appropriate for the dynamic work world. The individual who quickly denies his insecurity is the one who probably ought to devote the most consideration to his delegation practices. He might well ask himself if he is surrounded by such evidences of relegation as: frequent interruptions of work by individuals bringing questions rather than answers, long hours, night work, a constantly ringing telephone, a number of plans and jobs put aside for a more appropriate time, and a schedule which prohibits social, professional, and community activities.

How to Delegate

Most of us who are guilty of relegation want to delegate. We ask, "What are the things or acts which will bring it about?" There are ways, but they must be based on a solid foundation of the previously mentioned self-understanding, acceptance of certain obligations, and, finally, some of these specific acts.

The delegator commits himself to a program of communication. He invites some participation in the setting of objectives. He informs people of the "why's" and "wherefore's." He develops his people on a planned basis. He is willing to accept errors which are part of the learning process. He permits freedom of decision within the limits of assigned responsibility. He seeks out all available potential. Only as he is willing to accept such responsibilities as part of his delegation role can he really be effective.

What to Delegate

In identifying areas or activities for delegation, it is most fruitful to seek out those parts of the job that most readily lend themselves to delegation. Noting the *time-effort* relationship is helpful. Often we are caught up in a maze of details which, though very time-consuming or repetitious, require little in the way of either mental or physical effort. These details are prime targets for delegation. The *dollar factor* might also provide cues for delegation. In general, the manager will devote his efforts to those activities which will have greatest impact on the financial picture of the organization; the other activities are candidates for delegation.

Sometimes decisions fall into a *major-minor* category. The wise administrator reserves the major decisions for himself and delegates others.

The *development factor* should influence delegation. A healthy organization is one where employees with potential feel that they have the opportunity to learn and grow. Since most learning takes place on the job as part of the doing process, the manager through delegation can offer his subordinate challenge, variety, and readiness for promotion.

The *interest factor* has some realistic implications. All of us are prone to procrastinate on those activities which are not to our liking. In selecting tasks for delegation, some consideration should be given to this human factor. Sometimes the very task which we dislike may have particular appeal to a subordinate.

Evaluating Your Own Performance

To facilitate delegation or conduct an evaluation of one's present performance, the following approach may be helpful.

(a) List all those activities you ought to be engaged in which are rightfully part of your job.

(b) Keep a record of what you do and the amount of time you devote to various activities.

(c) Check those activities which you indicated are part of your job (Step 1) which are being done less than adequately (Step 2).

(d) Determine which of your present activities

(Step 2) can be performed by a subordinate. Scientists and engineers, for example, reported in a survey (2) that 64.2 per cent of their time was utilized in activities which might have been performed by people of lesser qualifications.

(e) Determine those activities in which you are presently engaged for which subordinates could be trained.

(f) Set up a delegation schedule in accordance with Steps 4 and 5, being cautious that you do not move more quickly than the group can accommodate.

(g) Set up a schedule for yourself which now eliminates delegated tasks and incorporates those job duties which have been neglected.

In the final analysis, delegation is a highly individual matter. There is always room for improvement, provided we learn how to better command ourselves and utilize the wealth of assistance about us more effectively. Wise, indeed, was the epitaph that Andrew Carnegie proposed for his gravestone: "Here lies a man who knew how to enlist in his services, better men than himself."

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Our Responsibility as Technologists

I believe the average American is afraid of the deeper implications of science and technology. We're all for "progress," a concept which has meaning only in terms of technology. We're all for a "higher standard of living," the goal which gives technology its motivation. Yet, as a group, we fear and distrust the people responsible for technology. A study in 1956 by Purdue University found that 14 per cent of college students think there is something evil about scientists; almost a third believe that one can't raise a normal family and become a scientist; one in eleven believes that a scientist can't be honest. More than a fourth think that scientists are willing to sacrifice the welfare of others to further their own interests.

This is a devastating indictment of scientists, or our educational system, or both.

This situation desperately needs correction. It is not so much additional scientists and engineers who are needed, as it is that all Americans need a greater understanding of science—its motivations, its methods, its achievements, and its limitations. Surely, a familiarity with the history and principles of science is as important to lawyers, doctors, businessmen, ministers, and politicians, as a knowledge of history, geography, or the language arts.

I believe that we in America have substituted values based on narrow, personal, and primarily material goals for the great Christian ethic which brought Western Civilization from the Dark Ages to the twentieth century.

What can we do to regain the lost ground? Clearly, in our society, the answer lies with the individual. We cannot deny that our cherished tradition of freedom of the individual is synonymous with responsibility of the individual. At the present point of history, where the most important issues which face us are implicit rather than explicit; where the pragmatic "see if it works" approach is ruled out by the irretrievable consequences of a misstep; where the complexity of our problems challenges our best minds; we cannot afford to leave the responsibility for thinking to someone else. We must accept the challenge ourselves.

No group in our society is better equipped to grapple with the problems we face than the technically trained. We understand technology, we are a part of it. We know its potentials and its limitations. We are not afraid to tackle big problems. We know how to face the challenges of the unknown, the ambiguous, the uncertain. Furthermore, as professional people, trained in technology, we enjoy the respect (somewhat fearful, perhaps) of those to whom all science is a mystery.

We can utilize these assets, collectively through professional societies such as The American Dietetic Association, and individually, as thoughtful citizens. We can do much to influence our young people, especially, toward a "hero image," which equates, at least, the dean's list with the sports pages. We can demonstrate in concrete ways, as individuals, our respect for the young person who achieves scholastic honors, or in other ways demonstrates his or her respect for intellectual endeavor.—*John Van Nuys Granger, Ph.D., President, Granger Associates, Palo Alto, California, speaking at the 42nd Annual Meeting of The American Dietetic Association in Los Angeles, on August 25, 1959.*

Translating You to Television[1]

KEITH THOMAS

Director,
California Foods Research Institute,
San Francisco

Even though many of you are not teachers in the classroom sense and are not employed in one of the communication media, you *are* teachers and communicators—all of you—just as I, as a public relations person, am a teacher and a communicator. Many of our messages are vital to human existence, *should* be heard and understood. But, are we saying, are we teaching the things we know must be taught, *effectively?*

In a recent talk to the New York State Home Economics Association, Irving Gitlin, CBS Director of Public Affairs, said, "Communication is everybody's business. Leadership responsibility in communication is everybody's business. We have the choice: We will either communicate effectively or we will perish."

Potentially, one of the most effective media of communication for you today is television. I would like to help you translate yourselves, your profession, your vast and vital knowledge to television.

Television is supposed to be a highly complicated media. In its electronic complexities, it is. But these things need not be your concern; the field is full of remarkable people who are masters of the monster's technical complexities. Many of them are wonderfully sensitive, humane people, too, eager and able to perform the sometimes difficult task of projecting you and your profession effectively via television—if you will let them.

Prepare in Advance

The first step, of course, is to make yourselves and your knowledge available. Let the stations in your area know what you have to offer. Don't try to do this the easy way by simply writing a letter or sending literature to your local television—or radio—program directors. Start by studying program listings. Pick out the programs that seem the most likely prospects. Watch or listen to them a few times so that you know something about them; or, have a staff member or someone in your family monitor them for you and give you a brief written report.

Then call the commentator or program director; immediately make it clear that you are *familiar* with a particular program or station activity. He (or she) will be pleased; for, surprising as it may seem, relatively few people take the time—before trying to arrange an interview or place material—to find out anything about a program or a station's program policies. Tell him you have *specific, developed ideas* for a particular program or personality and ask for an appointment to come in and discuss them. If you use this approach, I doubt very much that you will be refused.

Go to your appointment equipped with *several* ideas for features or interviews and be prepared to discuss a possible series of program features. *Continuity* appeals to radio and television program people, for it helps to build a following. But, don't suggest a series, if you are talking to the commentator or program director for the first time. Be content with setting up one interview or program feature. If that goes well, the door will be wide open for more exposures.

If your target is a particular program, it is often wise to approach the commentator directly. More often than not, particularly if it is a daytime program, the commentator is responsible for its content. Being on camera or on mike, is for these people, only a small part of their job. Their big chore is program preparation.

In an excellent article on educational television in this JOURNAL (1), Adelia M. Beeuwkes of the University of Michigan said that she spends about one hour of preparation for every minute on the air. It is all too obvious that not all television programs have that much preparation; yet the fact remains that a tremendous amount of advance work *is* required for a smooth, tightly-knit program. Therefore, when you come up with good program material, well organized and showing a *basic understanding*

[1]Presented at the 42nd Annual Meeting of The American Dietetic Association in Los Angeles, on August 26, 1959.

of the medium as well as the needs of a particular program or personality, the chances are you'll be "in." The commentator or producer will be glad to be partially relieved of the tremendous task of program preparation.

TV Is TV Is TV

I cannot overemphasize the importance of being familiar with the basic requirements of the medium as well as the particular program or personality with whom you are going to work. In this connection, I heartily recommend that you review carefully two guides prepared by your Association, "Briefs on Broadcasting" (2) and "Tips on Telecasting" (3). Both are excellent and should be most helpful if you are tackling television or radio for the first time.

I was pleased to see the section devoted to "Personal Appearance" in page 1 position of "Tips on Telecasting," *where it belongs.* The way you look to the viewer is almost as important as what you have to say. In your case, possibly it is even more important. Surely, it can't be entirely accidental that to many people the word "dietitian" conjures up a mental picture of a stern, antiseptic-looking gray figure, stiff as her starched white uniform and about as exciting as a calorie chart.

Do, if you're going to appear on camera, dress appropriately and tastefully, as "Tips on Telecasting" suggests. But I'll go a step further and urge that you look stylish, too. Every time you make a personal appearance, whether you're on television or speaking at a club meeting, you are contributing to the popular image of a dietitian. You have a responsibility to your profession to be seen at your attractive best.

If you feel better dressed wearing a hat, and if a hat is not going to look inappropriate on the show, wear one. You may look smarter for it. But, be sure that it is small and off the face. Even a slight brim may cast shadows across your eyes and rob your face of much of its expressiveness.

If it is to be a "sit-down" interview, or if you are going to be required to move about the set, you'll be more attractive in a fairly full skirt than in a slim, snug one. Sitting, you'll feel more comfortable and make a far prettier picture in a full skirt that falls gracefully about your legs than in a tight one that keeps working up over your kneecaps. In the hundreds of shows I directed in New York, I didn't see a single pair of telegenic knees.

This reminds me of another of my "pet peeves" as far as the human anatomy on television is concerned: bare arms, or more specifically, bare upper arms. Few women over the age of thirteen have upper arms that look attractive on camera. Even if you're doing a show in mid-August and the temperature is in the nineties, keep your arms, or certainly your upper arms, covered—particularly if you are going to give a demonstration or do anything that requires even a minimum of arm movement.

Bodily Movements

On the subject of movement, "Tips" again has sound advice. Action keeps a television picture alive, but movements should be somewhat restricted and slowed down. Many people, even veteran TV performers, tend to overdo this, however; so be careful that you don't "retard" so much that you look stiff and self-conscious.

I don't quite "go along" with the "Tips" suggestion that you sit on the edge of the chair. Certainly you don't want to slump, but if you literally sit on the edge of the chair, you may resemble a sprinter waiting for the starting gun. A simple trick that many television personalities use is to pull in the abdomen—hard. This, of course, tends to straighten your back and keep you from slumping, even if you sit well back in the chair. Maintain partial contraction of the abdominal muscles, and you can forget about everything else. Knees will stay close together, shoulders will stay attractively "square," and although arms and hands will move freely and naturally, you'll find that *gestures will automatically be minimized in number, size, and speed.* Some of you will know better than I the physiologic reasons for this. But I know this trick works for I've taught a number of people to sit this way on camera. Try it; I think you'll find it works for you, too. It soon becomes habitual; and it's a good habit to acquire, regardless of whether you ever appear on camera for television.

Vocabulary and Language

Voice is important, of course. On of the best ways I know to produce vocal and facial relaxation is to force a great yawn just before you go on camera.

But more important than voice is vocabulary. If you are working from a prepared script, go over it carefully, striking out every technical term you find and substituting a word or phrase that will readily be understood by everyone in the audience.

If you are scheduled for an "ad lib" interview, you will probably discuss the points to be covered with the commentator prior to the show. Think through the answers and comments you might make on the air and be ready to express your thoughts in everyday language—not *your* everyday language, but the non-technical vocabulary of the viewers.

At the beginning of an interview, take a few seconds to tell the audience something about your work; don't just say that you are the therapeutic dietitian at Hospital X or the nutritionist for a certain agency. This won't mean a thing to most viewers, and its wastes time if the interviewer must drag

specifics out of you. Briefly give one or two examples of things you do. Many of us spend so much time with our associates that we tend to forget that most of the people who live and work outside our specialized little worlds have not the foggiest notion of what we do or what some of the terms we commonly use mean.

Exploit Television in Your Community

Incidentally, has it occurred to you that in this technologic age when the average layman's work week is getting shorter, we specialists seem to be working longer and harder? I haven't heard anything about a 30-hr. week for a chief dietitian—or for a public relations man, for that matter! And with what is already, perhaps, an uncomfortably heavy work load, your Association, momentarily using me as its voice, is suggesting that you, or as many of you as possible, do more in television—the most demanding of all media in terms of time and energy!

I can't speak officially for the Association, but as one who has been associated with the media in one way or another the past twelve years, I urge you to give serious, thoughtful consideration to the possibilities for greater exploitation of television in your own communities.

Perhaps you have heard that people aren't watching television as much as formerly. In 1958, individuals on the average spent slightly less time watching television than they did in 1955; but in 1958, there were more individuals watching. The result: total viewing was at an all-time high.

For over eleven years, one advertising agency has carried on a major research project to provide information on listening and viewing habits. The guinea-pig city used to study the impact of television on the family is New Brunswick, New Jersey, known in this project as Videotown, and believed, after careful scrutiny of many communities, to be as typical as any one city could be for the purposes of such a study.

Among the many facts emerging from the 1958 study of Videotown is that television viewing time per person for an average week was 22 hr. 7 min. Projected, this is approximately 20 per cent of one's entire waking life! So don't make the mistake of assuming that, because you or the people with whom you associate aren't spending much time before your television sets, this is true of the rest of the population. Obviously, it isn't.

"Sociologically, television is the most potent medium of education and propaganda"—so wrote Richard Hubbell in 1945 when television was still in its swaddling clothes (4). Today there are few who would question that statement. It is not an accident that food advertisers as a group are continuing to increase their expenditures in television while reducing them in other media.

Radio's Renaissance

I shouldn't leave the Videotown study without mentioning radio. The biggest news from Videotown is the boom in daytime radio listening. Fifty-one per cent of the women said they listen to the radio *all day*.

The significance of radio's renaissance to you, aside from the fact that so many people are listening, is that most of the programs they are listening to are *local* programs. This means there are more —many more—opportunities for you on radio today than there were a few years ago when network programs dominated.

Don't tell me that most of your local programs are "just disc jockey programs," because I shall come right back at you with the recommendation that you work *with* the disc jockeys. If anyone needs material, it's the poor "deejay" who may be on the air from one to several hours a day, five or more days a week. I know from experience that numerous disc jockeys welcome food copy and use it.

Rock-and-roll may not be the framework you would normally choose for your propaganda, but if we are overly selective and restrict our choice of programs or publications to a preferred few, it is quite possible that we shall wind up talking to the same people all the time. Rock-and-roll has a big audience, usually a young audience and, therefore, to you, a vitally important audience. I am thinking, of course, of recruitment.

As you know, not all disc jockeys—even before the "payola" scandal—make up their programs from the "top 40" best selling records; nor does local radio programming consist entirely of record programs. Nearly every community has one or more so-called women's programs, newscasts, farm programs, and/or shows in other categories. You can and should make use of most of them, and I hope you are. I stress the disc jockey show because it makes up such a large part of total radio air time, and because I suspect that few of you have been working with your local disc jockeys as much as you might.

In preparing copy for your local "deejay" or, for that matter, any television or radio personality, avoid—and please excuse me if I am unnecessarily reminding you of this point—the "it's good for you" approach. This is as deadly to food copy as the label "educational" is to a radio or television program aimed at the great mass audience.

Minority of Millions

Not all radio and television programming is aimed at the masses, as many of you well know. Educational television is making great strides. We now have forty-three non-commercial television stations, and there are *many* more in the planning and building stages.

There is no question but that more and more peo-

ple, growing weary of horse operas, old movies, and the formula fare that constitutes so much of commercial television, are switching the dial more frequently to an educational station.

I hope you recognize the challenge as well as the opportunity in the progress educational television is making. John F. White, President of the National Educational Television and Radio Center, said recently: ". . . in the realm of ideas we are in competition with our commercial friends *as we must also be in the development of professional excellence*" (the italics are mine). Don't approach a television venture on an educational station with the thought that you can afford to be any less attractive or "professional" *as a television performer* than you should be on a commercial station. To influence the segment of the audience that is *willing* to learn as well as those trying to learn takes *showmanship*.

By that I do not mean that everything you do on or for television must be spectacular or startling. I am not talking about spangles as much as the *art of timing, a sense of drama,* and the *facility* with which you portray your ideas, yourselves, and your profession.

Whether you're planning a television or radio appearance, or writing a script or outline, search out the element of drama or surprise inherent in your story and make the most of it. Insofar as possible, relate every message directly to the lives of the viewers in your area. *Facility* will come with the doing, as it does in every other endeavor. And the more you do now, the better prepared you will be for the many new opportunities educational television will hold within the near future.

I do not wish to overemphasize the future of educational television. No matter how informative, entertaining, or widespread educational television becomes, commercial stations will undoubtedly continue to lure the larger audiences. (They will or they won't be in business!) Assuming you want to reach as many people as possible, the commercial station, barring exceptional circumstances, should therefore be your chief target.

Messages for Moppets

Again, as when I was talking about radio, I implore you not to limit your television thinking to the one or two types of programs that have become the accepted vehicles for public service. If there are no longer any homemaker or interview shows on your local stations, you must learn to ride other televehicles.

Nearly every commercial station has one or more largely-film programs for children. Most of them follow the same format: a series of cartoons or short films with a "Skipper Fortune" or "Captain Bob" on hand to talk to the kids and, just incidentally, persuade them that they had better go to the store with Mommy tomorrow to make sure she doesn't forget to buy "Whizzies."

Many of the "emcees" of these moppet shows have a dummy or puppet character (dummies and puppets are cheaper than live actors, you know) with whom they converse. Few have any assistance in putting together the live portions of their shows. Their salaries seldom permit the luxury of writers. *They* need program material. *You* need to reach their audiences, the children—the millions of children who are acquiring lifetime food habits. Like it or not, no one can do more to establish the food preferences and prejudices of our susceptible offspring than a Howdy Doody or a King Fuddle.

I think, ladies and gentlemen, the time has come for you to bare your talons. But, attack wearing velvet gloves. Watch one or more of the kiddie shows in your area a few times so that you learn the patois of the master of ceremonies and his vis-a-vis. Then, "translate" a few basic concepts of good nutrition—simple principles or rules that young children can understand and remember—into the dialect. Put them in dialogue form if that fits the show's format.

Make a date with the "emcee" and show him the material. If you've done a useable, appropriate translation, he'll grab it, gratefully, and ask for more. You may soon find yourself writing regularly for the program. After all, most of these men and women have a genuine love for children. Money, alone, couldn't possibly compensate for some of the situations they must cope with on shows where there is a studio audience composed of children and little monsters dressed like children.

Between the cartoons and commercials, many of these masters of ceremonies earnestly try to pound some good habits into the little darlings' calloused consciences. They will welcome your knowledge and your help, and you will be making an immediate and lasting contribution to the health and happiness of the children of your area. Personally, I can't think of anything more gratifying.

TV's Teen Times

Another popular format employed by at least one station in many cities is the late-afternoon, teenage dancing party. As a rule, groups of students from various schools are invited to the studio to dance to their favorite records. The master of ceremonies is usually a minor celebrity in the area, young enough to be accepted by the students and old enough to know that one sometimes must make a living any way he can. In addition to introducing the records and handling the commercials, he usually conducts several interviews.

I suspect you are way ahead of me and have guessed that I am again suggesting rock-and-roll recruitment. Right!

The military, the airlines, and other industries exploit these programs in their recruiting efforts because these shows reach hundreds of thousands of teen-agers and because the youngsters are more inclined to be receptive in this atmosphere than, say, in a school assembly.

The selection of the person to carry your recruiting appeals is of utmost importance. Heed the admonition in the January, 1959 issue of the A.D.A. *Career Guidance Newsletter* (5) to ". . . remember these youngsters are evaluating *us* with a mental 'Is *this* what a dietitian's like?'" If you and the members of your staff are frankly over twenty-one and look it, then perhaps you should book a dietetic intern for the show. Pick the cream of your current crop, not so much in terms of her—or his—accomplishments as from the standpoint of attractiveness and ingratiating personality.

Let the intern tell some of the fascinating things she is doing, why she chose dietetics for her career. Outline the interview—many emcees welcome a list of suggested questions—so that she will have a chance to convey the *variety* of positions within the field, the thrill of working as part of a medical team as a therapeutic dietitian, the opportunities in American hospitals overseas, the attractive jobs that are available to nutritionists and dietitians in the business world. In other words, *give your recruiting story the glamor treatment!* And if you're lucky enough to have a glamor girl tell your story, so much the better. Get your recruiting story out of the classroom and onto the dance floor! You can do it with television.

Techniques for the Non-Telegenic

I am not implying that you should avoid television appearances unless you are a telegenic "glamor puss." You don't have to look like a Lux girl to be an interesting, pleasing camera subject.

But let's face it: Some of us should not be seen on television. You, yourself, don't have to be *on* television to exploit it effectively. Some ways to do this are suggested in "Tips on Telecasting" (3), already mentioned. There are other things you can do, too. If you are a hospital dietitian, send your local women's commentator the recipe for a dish that is a favorite with patients or that you will feature at holiday time. Better yet, provide her with a complete kit—recipe ingredients, dishes, tray, everything she will need to demonstrate and show the dish as it is served in your hospital.

At California Foods Research Institute, we have been using television kits with a most gratifying response from stations all over the country. This box contains virtually everything the commentator needs for a major program feature on instant minced onion. The over-all editorial theme, however, is not instant minced onion but foreign cookery. Onion, the most commonly used seasoning next to salt, is portrayed as "first citizen of the food world." In our script, we discuss the cuisines of various countries and give our adaptations of characteristic dishes. In revising the traditional recipes for busy American homemakers, we streamline methods and stress creative use of convenience foods. In every recipe, instant minced onion is a key ingredient. And so, within the colorful framework of a feature on foreign cookery, we are able to do a soft-but-solid selling job for the product via a *popular, local* commentator, *trusted* by her *loyal* viewers.

Sell Your Service and Yourself

In virtually every major viewing area, there are one or more local television personalities for whom you could prepare kits of program material—material that would enable them to communicate your message effectively to thousands of people. You might, for example, relate your hospital's food service to some broader theme such as "So You're Going to Have a Baby" or "Is Your Child Going to the Hospital?" (There is a baby or a child somewhere in the life of nearly every viewer, and so a theme such as one of these will have immediate, personal appeal—to grandmothers, neighbors, friends, and relatives as well as to the expectant mother or parent.)

Write a script covering the facts that everyone faced with one of these situations for the first time would want to know. Then, work out a few simple "visuals." Your hospital's food service will be a natural element in the story and can be dramatized by the demonstration of a recipe or the setting up of a complete tray as it would be served a new mother or a child in the hospital for a tonsillectomy.

I can see no sound reason why you shouldn't aggressively publicize your hospital's food service (assuming, of course, that it is at least on a par with that of other hospitals in your area). Take a lesson from the major airlines. Most people believe that, in general, the planes are much the same, that the ground and flight personnel have had intensive training; and so they fasten their seat belts believing that everything human skill and knowledge can do to insure their safe arrival will be done. In much the same way, the public assumes that most hospitals are clean, that the doctors and nurses are competent, and so on.

Food service is one of the few facets of airline operation that provides an opportunity to claim distinction and superiority. And don't the airlines make the most of it! I'm sure I am not the only person choosing a particular airline because I have been convinced that I will have a better meal in flight than if I travel on another airline offering an equally convenient flight schedule and comparable equipment.

Superior food service can be just as influential in making *your* hospital the preferred one in your community. There's no better way to publicize your food service than to talk it up on television where people will *see* what you have to say. Establishing a reputation for superior food service will not only draw favorable attention to your hospital, but *inevitably* will bring increased *recognition* to you and your profession. This applies, regardless of whether you are engaged in hospital or some other type of food service.

You *must publicize and popularize your profession*, especially if you hope to attract some of the best of the lively young talent. Other fields are competing cleverly and unrelentingly for the same active, energetic young people your profession needs. They are going to pick off the good ones, and you're going to be left with the duds *unless* you communicate a sense of the excitement as well as the sense of personal fulfillment inherent in your profession.

In certain circles, even the term "home economist" is becoming almost a stigma. Don't let this happen to the words "dietitian" and "nutritionist." You can make sure they connote vitality, progressiveness, *and importance.* (You have a certain advantage in that to many, many people the words, as yet, have no meaning.)

You are important people, but relatively few persons are going to know how great your contributions are unless *you* communicate this to them. Use every means you can find, but remember: of all communications media, *the most influential is television.*

I'm sure you will indulge me now if I again employ the vernacular of the non-professional to summarize in three words: "Get wise. Televise."

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Water for the Space Traveler's Needs

The pilot of a space ship on the way to Mars can drink water extracted from his own body wastes, according to a report made to the 137th national meeting of the American Chemical Society in Cleveland in May. M. H. Bengson and J. J. Konikoff, biochemists with the Space Sciences Laboratory of General Electric Company, Philadelphia, told about laboratory production of potable water from urine and feces.

They pointed out that supporting human life in space is one of the most challenging problems facing scientists today, for as flight duration increases, the need for regenerating man's needs from his metabolic wastes becomes more imperative. In other words, a space ship going to Mars or Venus cannot carry all the water its crew will need.

The water produced in the Space Sciences Laboratory has become so commonplace, that laboratory workers do not bother to go across the hall to the water cooler when any of this uniquely produced water is available. It cannot be distinguished from distilled water, but it can be distinguished from ordinary Philadelphia drinking water, the laboratory-produced water being of a higher quality.

The process developed in the laboratory has the advantage of utilizing two conditions found abundantly in space—vacuum and solar energy. The wastes are distilled by using the vacuum in space and then passed through a high-temperature catalytic zone, heated by solar energy, where bacteria, odors, and other toxic materials are destroyed.

Ninety-five per cent by weight recovery has been obtained with no difficulty, it was reported. Of particular interest is the fact that no other method found in the literature can produce drinking water from fecal material. Yet their method not only produces water of impeccable standards, but also extracts almost all the water present.

The recovered water has been analyzed many times and has been found to exceed the requirements published in the U. S. Public Health Service's drinking water standards. The research is being continued on two fronts. Tests using animals, which will be fed recovered water for extended periods, will allow study of possible build-up of toxic material. Also, the engineering requirements for the apparatus which will actually recover the drinking water in space are being worked out.

New and Improving Food Products[1]

EMIL M. MRAK, Ph.D.

Chancellor,
University of California,
Davis

WHEN ONE proposes to talk about the newer aspects of food technology, he must take into consideration the newer aspects of our mode of living. Today, fewer hours are spent in preparing food in the home, and foods of better quality, with respect to taste, color, texture, and so on are being used. Food preparations are stored in the home and are ever ready for use in a short period of time. Most important of all, so many of the food preparations we use today are easy to handle and require much less time for preparation than they did thirty or forty years ago.

Fewer hours in the home, of course, mean that more hours in the factory are required to produce these foods. Food manufacturers have assumed the responsibility for doing much of the preparatory work on food previously done in the home. This means, therefore, that the present-day food manufacturer must consider many factors that are so familiar to manufacturers of non-food products. The food processor today must deal with factors pertaining to quality control, production, storage, distribution, and consumer acceptance. To do this, he must maintain an active research organization.

In some cases, the "art" of food preparation has yielded, giving way to science; in others, the change is still taking place. Food processing today involves the use of practically all of the sciences and, in line with this, there is a great demand for food technologists with a training in microbiology, chemistry, physics, mathematics, and engineering, as well as food science.

The food scientist of today has a completely different outlook than he had before the war. As a result, the newer aspects of food technology have come into the food processing picture. The food technologist is continuously trying to improve the product for the consumer, anticipate changes in eating habits, eliminate nuisances, and make the food easier to use in every way. In line with this, he is always striving to develop new products. He even considers packaging and the ease of storing and opening the packages.

Convenience Foods

I would like to take a quick look at what this new point of view has done to some of the foods we are now consuming. I could list many specific examples of changes that have occurred, but this is not necessary; a few should suffice. Certainly, you are all aware of certain convenience foods. Anyone can make a cake today—even I. Moreover, I have been told that even expert bakers can do better day in and day out by using the prepared mixes than by preparing their own. This is particularly true of such difficult items as the angel food cake.

Other examples of recent developments in dry premixes are the premixed salad dressing powders which enable any one to add a little vinegar and oil and make a good dressing. Prior to this development, many housewives found it difficult to make their own. Premixed dips have also come on the market. I can assure you that these items have presented the scientist with many problems.

About 40 per cent of the potatoes produced in Idaho are now being used for the production of potato granules and other potato products, most of which are convenience items. This is a very dramatic change, since only a few years ago, hardly any potatoes were processed, except those that went into potato chips. This development, however, confronted the food scientist with many problems to solve before production could start. The raw material posed some real problems at the very start; if potatoes are stored improperly, starch is converted to sugar, which turns brown in granules and dehydrated products and even in chips. When these items darken, they don't sell well—if at all. A great deal of consideration has had to be given to the oil that is used in the manufacture of frozen French fries. Packaging and storage also presented problems.

An interesting item developed in California during the last year or so is frozen chopped onion.

[1]Presented at the 42nd Annual Meeting of The American Dietetic Association in Los Angeles, on August 26, 1959.

Truly, this is a convenience item for it eliminates weeping.

Another product that has been placed on the grocery shelves since the war is the seedless olive. As may be expected, when seeded olives are served, more are consumed than when unpitted. The reason is obvious: the consumer dislikes seeing a large number of seeds discarded on the plate before him even though he may like olives.

"Instant" Foods

We have done some very dramatic things by "instantizing." Today we have an instant dry milk. Even though it is a relatively recent development, consumption of this product has been increasing at a rapid rate. I have been told by scientists working in the field that the time may not be too far away when we'll have a very satisfactory instant whole milk powder. Such a product could result in far-reaching changes in the mode of handling, distribution and utilization of milk.

Other "instantized" items, of course, are cereals, dried soups, rice, and so on, and now there is even talk about an instant bread mix. Using such a mix would merely involve mixing the product with water, placing in the oven, and baking. This, of course, is an item that may very well be used by commercial bakers as well as homemakers.

Luxury Items

The idea of convenience foods has resulted in the introduction of complete frozen meals, frozen pies, and so forth. These items have posed many problems for the food scientist. Some are concerned with raw materials, others with methods of preparation and storage. As time goes on, we can expect many of these items to improve.

Some luxury foods have been placed on the market with the view of satisfying the desires of a limited number of consumers. In these cases, however, the problems are enormous, the prices are high, and the sales are low. Consequently, the manufacturers cannot afford to spend large sums on research to make a gourmet product that will fulfill all the requirements of the consumer and food scientist. Examples of such foods are turtle soup, crêpe suzettes, and fancy desserts.

Methods of Food Preservation

Newer methods of preservation are being studied with the view of obtaining a better quality product and, in some instances, even a greater yield from the raw material. Aseptic packing has great promise for juices, baby foods, and dairy items. Many problems, however, still remain. These are concerned with aeration, consistency of fill, formulation, and ideal heat exchange equipment. As time goes on, I'm certain these problems will be solved, and we can expect better products. It is quite possible that this process will enable us to preserve some products not now preserved by heat. The process merely involves heating an item to a very high temperature for a very short time, perhaps less than a minute, and then cooling and filling into a sterile container at about 80°F. The container, of course, is sterilized before filling and sealed under sterile conditions after filling.

Other methods of preservation are being studied rather extensively. Irradiation perhaps is receiving more consideration than either ultrasonic procedure, dielectric heating, or even antibiotics.

Antibiotics have received considerable publicity but thus far haven't given the results expected. They may be used to advantage under certain conditions, provided they are applied at the proper point and adequate sanitation is used. They could be advantageous in such items as cut-up poultry and fish. It is possible that mixtures of antibiotics may be used, or perhaps new ones developed, that will help solve some of the present problems.

Dehydration, an old method of preservation that has been in disrepute for some time, seems to be coming back and offering new possibilities. In the past, we used air blast driers at elevated temperatures but either vacuum or freeze-drying seems to hold promise for the future. As a matter of fact, if we could find some method of transferring heat rapidly into the frozen product before drying, perhaps by the use of microwaves, we might see freeze-drying coming into its own soon. It has much to offer from the standpoint of quality, storage stability, and convenience. At present, however, the product is frozen, placed in vacuum, and heated by conduction to melt the ice for drying. This, of course, is slow and may require as long as 24 to 30 hr. drying time for such items as steaks. If the drying time could be reduced to an hour or two, the process would probably be practical. Freeze-dried meats that have been produced experimentally are excellent for use on camping trips and in outlying places. They are light weight, the stability is good, and the flavor and texture are excellent. They are, however, somewhat dry, and this problem hasn't yet been solved.

Future Developments

Let's look into the future. It is now well realized that nature doesn't always do the best job on the foods it produces. Much has been said about nature's method of producing a product, but we know today that flavor may vary greatly from year to year, from one location to another, from tree to tree, from plant to plant, or even from one side of the plant to the other. Likewise, cooking and eating characteristics may vary. This is particularly true of such an item as tomatoes, in which we not only have variations in flavor, texture, and sugar-acid ratio but also in nu-

tritive value and possibly stability. In line with this, the newer thinking is that we might remove something from the product and put something else in that would actually improve it. A good job might well be done on rebuilding foods and remanufacturing tomato products, milk, and so forth. This is something we may see more of in the future. If this is not done, there may be a trend toward more synthetic foods, some of which are already on the market. Since the trend is toward high quality and long lasting convenience foods, rebuilding may be essential to meet consumers' demands.

In the production of dried eggs, we know that if we remove a slight amount of glucose that is present, the stability of the dried egg will be greatly improved. This is done by the use of a harmless enzyme that occurs in nature. Before processing potatoes, it is necessary to store them at higher temperatures in order to convert any sugar to starch. This treatment lengthens the shelf-life of the processed products such as granules, flakes, chips, and so on. We already add vitamins and minerals to some of our foods, and this is an accepted practice. In other cases, we may add stabilizers, flavors, colors, and other additives. It may, in the future, be necessary to add such things as preservatives, anti-oxidants, surfactants, thickeners or maturing agents, buffers, acids, and alkalies. Such additives are, of course, chemicals. The use of additives makes possible the great variety of high quality and nutritious foods available today. Many of the so-called additives are produced in nature, or if synthetic, are similar to those produced in nature.

New Legislation

Two new laws are concerned with the safety of foods. One is the Miller Bill which applies to agricultural chemicals. It provides for tolerances to be established on the basis of experimental data so that food is safe. The other is the food additive bill which permits the establishment of tolerances for the use of additives in foods. In many cases, a zero tolerance has been established, which means that the use of an item is not permitted.

Much has been written about the new food law and the use of chemicals in foods. This law requires that toxicologic work be done on any chemical before its use is permitted. Even then, a tolerance is established that is 100 times what is considered the safe limit.

The Food and Drug Administration has been very conscientious about the use of additives in foods and the tolerances established. On a number of occasions, it has sought the advice of the Food Protection Committee of the National Research Council of the National Academy of Sciences. This committee has outlined procedures for testing chemicals for safety which are now accepted not only by the Food and Drug Administration but by the World Health Organization and several other countries. These procedures are under continuous consideration, so that, if newer methods are developed that will enable a better evaluation for safety, the methods will be changed.

The Food Protection Committee has gone on record as follows (1): "There need be no hazards involved in the use of chemical additives in foods provided scientific research programs are carried out prior to use. The fact that a chemical is toxic does not mean *per se* that its proper use as an additive will entail a hazard to man. . . . An intentional chemical additive should not be used in a food (either in production or in processing) until its safety for a given food use has been established beyond a reasonable doubt, as judged by competent experts."

Distinguishing between a hazard and a toxicity, the Food Protection Committee continues (2): "*Toxicity* is the capacity of a substance to produce injury. *Hazard* is the probability that injury will result from the use of the substance in the quantity and in a proposed manner."

Recently the U. S. Public Health Service has established a special study section on toxicology for the purpose of promoting research in this area, with the idea of developing better and faster methodology.

In conclusion, I would say that the newer aspects of food technology involve a new type of thinking. This takes into consideration every factor from production on the farm to processing, storage, distribution, and consumption. Above all, it involves the factors of importance to the consumer, including acceptability, convenience, stability, esthetic values, safety, and nutritive value.

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For the first time, meats, dairy products, vegetables, and fruits may now be carried fresh to the very heart of the Sahara, according to *France Actuelle*. Two cold compartments have been fitted on trucks with refrigerating units which will preserve the foods even with outside temperatures of 140°F., no matter how long the trip.

Prepared Frozen Foods[1]

HELEN L. HANSON, Ph.D.

Western Regional Research Laboratory,
Western Utilization Research
and Development Division,
Agricultural Research Service,
U. S. Department of Agriculture,
Albany, California

THE NEWEST AND most dynamic development in the frozen food industry is the tremendous growth of prepared and precooked foods. These foods offer advantages that make them of increasing interest to dietitians who, of course, recognize that nutritional adequacy of a diet is not sufficient to guarantee good nutrition. Foods must be palatable, and a reasonable variety in menus is essential.

Some of the most recent of the time-temperature-tolerance studies conducted at the Western Regional Research Laboratories have been concerned with the development of principles that will assure prepared and precooked foods of high original quality and retention of this quality for a long time at below-freezing temperatures. The prepared food industry is utilizing these principles in developing a wide variety of delectable products—meats in wine sauces; vegetables with many types of seasonings and sauces; complete dinners and individual items; and hors d'oeuvres, foreign foods, and desserts that require only defrosting or reheating. So that you will be able to take advantage of these new developments and see how they will fit into your operations, this discussion will summarize the prepared-food phases of the time-temperature-tolerance program of our Laboratory. The objectives of the whole program and some information on uncooked frozen foods have been presented by DeEds (1).

Prepared frozen foods differ so greatly from one another in their formulation and composition that no rigid rules can be applied to guarantee an optimum product by the time it reaches the consumer. In some products, flavor stability is the most critical problem, that is, retention of freshly cooked flavor during freezing and storage. In others, problems of texture and appearance occur, i.e., retention of smoothness in sauces and gravies, prevention of mushiness, color loss in vegetables, separation of egg- or starch-thickened desserts, liquid separation, and toughening of hard-cooked egg white.

Flavor stability is influenced by various factors:

(a) The nature of the original product.
(b) Processing methods.
(c) Package atmosphere.
(d) Temperatures in commercial operations.
(e) Time of exposure to various temperatures.

The Product and Processing Methods

Problems inherent in the nature of the original product can be illustrated by a comparison of chicken and turkey. It is well known that chicken becomes rancid less rapidly than turkey.

Processing methods can influence flavor changes. Rancidity develops more rapidly in cooked than in raw frozen poultry. Study of the flavor problem in turkeys has shown that greater rancidity developed when birds were roasted than when they were simmered or pressure cooked (2). However, even when the birds are simmered, sufficient rancidity develops in some lots to be readily detected. Rancidity is especially pronounced if the turkey fat is used in making gravy, but a sauce or gravy made with stable fat increases the storage life of the cooked meat by excluding air from the package.

Adding anti-oxidants to the water in which the turkey is cooked adequately retards rancidity development in frozen meat that is covered with a sauce or gravy (3). The fat is then stable enough to be used in the gravy. Use of anti-oxidants has not been specifically approved for turkey products by the Food and Drug Administration, but their use has been approved to prevent rancidity in other fat-containing products.

Problems in Packaging and Storing

PACKAGE ATMOSPHERE

The atmosphere immediately surrounding the food within the package, is extremely important. Air (oxygen) should be excluded as much as possible. This may be done in three ways:

[1]Presented at the 42nd Annual Meeting of The American Dietetic Association in Los Angeles, on August 28, 1959.

(a) Air can be excluded by a very tight-fitting, vapor-proof package.

(b) Air is excluded when food is packed with sauce or gravy. This is the reason that foods such as chicken à la king, meat and gravy, and vegetables with sauces retain an acceptable flavor for a year at 0°F. Our studies of laboratory- and commercially-prepared turkey dinners and turkey pies also illustrate this principle. Since the meat is in a "solid pack," surrounded by dressing, sauce, or gravy that protects it from the air, the products retain their original quality remarkably well (4). Cooked peas are less stable than blanched peas, but cooked peas in a solid pack—surrounded by sauce, gravy, or other foods—are as stable as blanched. In contrast, frozen fried chicken has a shorter storage life because air is not easily excluded from the package. After four to six months at 0°F., fried chicken develops a stale or "warmed over" flavor (5).

(c) Air can be replaced in the package by an inert atmosphere, such as nitrogen. Our studies with frozen, fried chicken showed that rancidity, which was detected after two months' storage at 20°F. in commercial containers, was not detected even after twelve months in nitrogen-packed samples held at the same temperature. The beneficial effect of nitrogen packing for fried chicken stored at 0°F. is shown in Figure 1.

Nitrogen packing as a method of preserving flavor in precooked frozen products is not now used to any extent, but it is conceivable that it will be adopted as the most practical method of preventing rancidity in high-cost foods that would otherwise have a limited storage life.

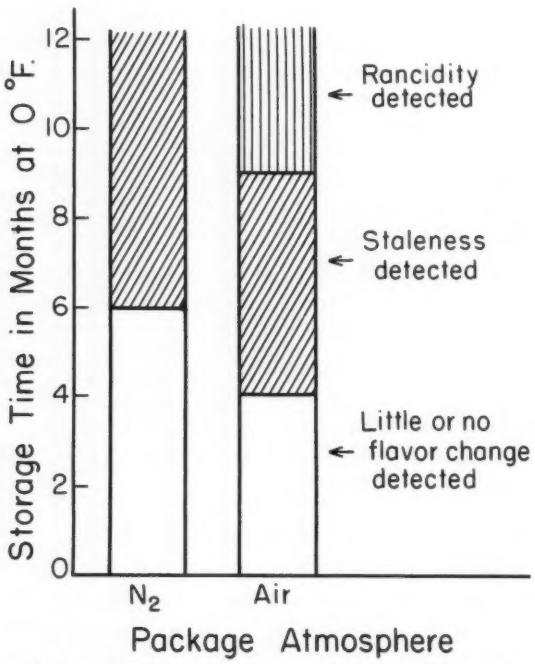

FIG. 1. *Effect of package atmosphere (air vs. N_2) on off-flavor development in fried chicken stored at 0°F.*

STORAGE TEMPERATURE AND TIME

Temperature of storage is important in precooked and prepared frozen foods, just as in uncooked foods. Products in an air atmosphere are even more sensitive to elevated temperatures than are products in a solid pack or an inert atmosphere (Figure 2). Rancidity which was detected in two months at 20°F. in commercial samples of frozen fried chicken (not nitrogen packed) was detected in six months at 10°F. and in nine months at 0°F.

Storage time, during which desirable flavor will be retained, depends on all of the above factors. By combining information on the original product, processing methods, package atmosphere, and temperature, the companies that produce and handle frozen foods can provide excellent products at retail. And, by knowing the general types of products that have limited stability, the dietitian can see that these foods are stored under optimal conditions and are used before off-flavors develop.

Texture Problems

Texture problems occur in frozen foods thickened with starch, flour, or egg. These include: chicken à la king, meat and gravy, chicken pie, thickened fillings for cakes and cream puffs, custard and pudding-type desserts, and hard-cooked eggs. The major change that occurs is liquid separation after thawing. Its seriousness also depends on whether the

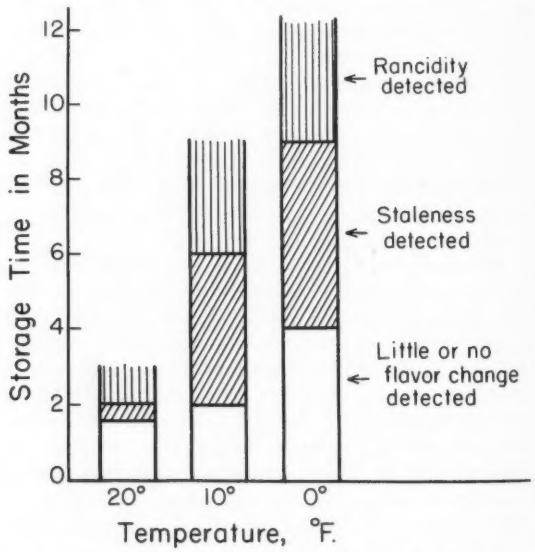

FIG. 2. *Effect of storage temperature on off-flavor development in frozen fried chicken in retail packages stored at 0°, 10°, and 20°F.*

product is heated before it is eaten and whether it can be stirred to improve its smoothness.

Sauces and gravies look curdled after freezing; this increases during the storage and is accelerated by high (10°F.) storage temperature. It is especially noticeable in food thawed before reheating; it disappears somewhat on reheating, particularly if the product can be stirred without damaging the other ingredients. This defect is particularly important in the new "boil in the bag" foods, such as meats or vegetables with sauces and gravies that cannot be stirred during heating.

In the study of this problem, many thickening agents and stabilizers have been tested. One—waxy rice flour—was found to be superior in retarding liquid separation and curdling. With it, sauces and gravies can be prepared that are stable for approximately a year at 0°F. (6). Although they may show some separation after longer storage or if held at a higher temperature, when heated to serving temperature the liquid disappears without stirring and the sauces become as smooth as if they had never been frozen. This flour causes no apparent flavor differences in the product and is now being used in these foods by a number of manufacturers.

The liquid separation that occurs on freezing and thawing of desserts, such as custards, puddings, and foods with thickened fillings, is more obvious than that in sauces and gravies, since the desserts are not reheated before serving. They can be improved by replacing part of the usual thickening with waxy rice flour and, if necessary, adding gelatin to give the desired consistency (7). The effect of constant and fluctuating storage temperature on liquid separation of these products is illustrated in Figure 3. Products that might inadvertently be held at 10°F. or be subjected to temperatures fluctuating above 0°F. can be successfully protected by adding various stabilizers (8).

Freezing of eggs presents some peculiar problems. Hard cooked yolk is satisfactory for use in dishes such as frozen chicken à la king, but hard-cooked egg white becomes rubbery, granular, and watery and separates into small clumps or layers on freezing. Studies of mixtures of egg yolk and white indicate that an egg preparation suitable for use in frozen foods can be prepared from such mixtures (9).

Problems also have been encountered in using vegetables in cooked products that are to be frozen (2). The problems usually involve changes in texture and color through overcooking before freezing or in reheating. Overcooking of peas, for example, causes them to develop a mushy texture and lose their desirable green color. Some vegetables do not freeze well. For example, celery does not retain its crispness. Sometimes this type of texture problem can be circumvented by substituting unusual vegetables. Chinese water chestnuts, for example, retain their crisp texture under all conditions of processing and reheating. Since they also have a bland flavor, they can be used to advantage in many frozen mixtures to provide crispness.

Obviously, the opportunity for altering the stability of prepared products is greater than it is for unprepared foods which have few additives or combinations. It is normal to add a number of different substances in prepared dishes, and some of these may be added for reasons of stability as well as acceptability. However, it is also true that certain prepared foods for one reason or another are not as stable as their uncooked counterparts. Because of this variable stability, it is important to hold these prepared frozen foods, as well as uncooked frozen foods, at temperatures dictated by good commercial practice. Types of prepared frozen food (packaged according to customary good packing procedures) which show little change in six months to a year at 0°F. include: cooked poultry, vegetables, and meats in a solid pack with sauces or gravies. Prepared frozen foods that show changes in three to four months at 0°F. include: cooked poultry, vegetables, and meats, such as chops, steaks, and fried chicken in loose pack in contact with air.

As already indicated, variations in stability among commercially prepared frozen foods are expected so

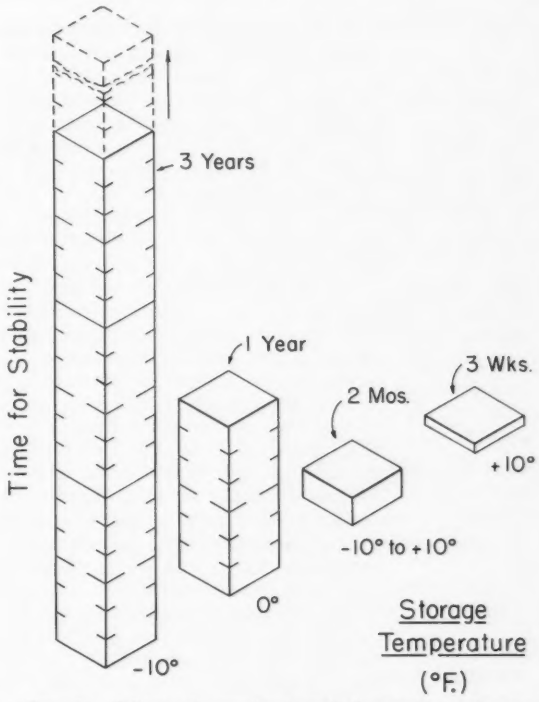

FIG. 3. *Effect of constant and fluctuating storage temperatures on stability of frozen white sauce thickened with waxy rice flour.*

that the use of these time and temperature recommendations do not necessarily guarantee *complete* freedom from measurable quality losses. Because of this, it is especially important to avoid exposing precooked frozen foods to high temperatures before they are used. This variable stability also means that successful handling of some precooked frozen food at temperatures above those recommended for good commercial practice does not necessarily guarantee that other precooked frozen foods will not be damaged significantly by such treatments.

Recent developments in research have increased the variety of precooked foods that can be successfully frozen. Continued research and application of its results to maintenance of high quality should make it possible for the frozen food industry to take full advantage of this growing market.

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Factors in Successful Dietary Management of Patients

My first encounter with the problem of the psychological approach to the dietary care of a patient came when I found that some of my cases would not eat what I prescribed. I was not prepared for this situation. I had been taught the diet therapy of diseases, not of patients as living individuals. For a little while, I thought that patients who broke their diet were just dumb, but I soon found out that they were in other respects sometimes very intelligent (e.g., doctors!), who knew how to devise clever ways of escaping the medical prescriptions. The next attitude I developed was one of rejecting the evil-doers: "If you do not follow what I told you, you will have to carry the responsibility yourself." However, when I had seen a young woman with diabetes, whom I had refused to treat further because of her constant cheating, re-enter the hospital in a coma, I felt that this was a consequence which neither of us had foreseen and, in any case, that this was a much too heavy punishment for an after-all understandable desire to eat the same as other people. It was this experience which made me interested in the motivation which causes some people to stick to their diets with relative ease, and others to find it hard or impossible to do so. In this search I was not alone, and by now, after much trial and error, some understanding has arisen of this problem. If one once accepts that man is not only driven by reason and intelligence but that inner drives and feelings, often only partly conscious and rational or controlable by will power, also determine his behaviour, insight develops where judgment failed. We then can search the motivation for cheating of dietary prescriptions not only in lack of intelligence or responsibility but in what these prescriptions mean for the individual, constituted as he is as a more or less harmoniously integrated whole of attitudes and behaviour patterns that have been developed by the interaction of hereditary potentialities and acquired experiences. When this method was followed, it was soon found that a dietary prescription (as indeed every form of medical interference with the behaviour of the individual) has not only an intellectual or scientific aspect, but has also an emotional meaning for the patient.—*Abstract from: "The Psychological Approach in the Dietary Care of the Patient" by Dr. J. Groen, The Second Medical Service, the Wilhelmina-Gasthuis, Amsterdam, the Netherlands, in Proceedings of the Second International Congress of Dietetics, Rome, 1956.*

Using the Cross Chart in Planning Kitchen Layouts[1]

REGINA GOTTLIEB
and MARY A. COUCH

Department of Institution Management,
New York State College of Home Economics,
Cornell University, Ithaca

A cardinal principle of layout planning is that materials in production should be moved minimum distances. This shortens production time; decreases employees' effort and fatigue; lowers labor costs and materials-handling costs; and aids in simplifing supervision. To realize these advantages, back-tracking and by-passing of equipment must be minimized, as such trips increase distance and may also cause traffic congestion and production delays. The minimum distance attained may be a straight line, or it may be a circular path or other design.

THE CROSS CHART, a graphic device somewhat like a road chart which shows mileage between cities, has been applied by industry in multi-product manufacture for the planning of efficient layouts. On the cross chart, industry records for interpretation in terms of layout needs: the trips of materials in production and the direction of these trips, that is, forward, back-tracking, and by-passing moves between pieces of equipment or work areas. Trip frequencies and directions are then analyzed and changes are made in the equipment arrangement which minimize wasteful moves, thereby achieving a more efficient layout.

The cross chart method was tested in our earlier study (1), because, in food production, as in multi-product manufacture, the problem is one of planning the most efficient layout for the variety of items to be produced. A number of different pieces of equipment are used in processing the ingredients required due to the number and diversity of menu items; thus a layout arrangement is desirable which will reduce the frequencies and length of trips for greater efficiency in production. The results of the test with a single recipe indicated that the cross chart method could serve usefully in planning efficient equipment layouts for institutional kitchens.

However, for greater validity of the cross chart method of layout planning, it was deemed important to extend the study to test a substantial number and variety of menu items typical of institutional kitchen production. It was also considered important to study in the cross chart, other factors which affect layout efficiency, such as distances between pieces of equipment, priority or importance of menu items, production time, labor cost, and the value to layout efficiency of additional or duplicate pieces of equipment. Another problem in layout efficiency which might be studied by the cross chart method is the point at which the centralized or decentralized kitchen should be recommended.

It was the purpose of the present study to use the cross chart to test the effect on layout efficiency of multiple recipes representing various menu item groups, and to include the factors of (a) recipe importance and the (b) distance between pieces of equipment.

Review of the Cross Chart Method

One advantage of the cross chart is that a large amount of data may be recorded without confusion in analysis of the data. However, in illustrating the cross chart method by way of review, a single menu item will be used to simplify interpretation. The

[1]Part of New York State Research Project No. 26, "Relation Between Ingredients and Processes Used in Institutional Recipes and the Requirement for and Placement of Equipment in Institutional Kitchens." Received for publication June 5, 1959.

TABLE 1 Recipe for cheese soufflé,* indicating procedures, trip sequences, and equipment required

INGREDIENT	PROCESS	TRIP SEQUENCE	EQUIPMENT REQUIRED
Nonfat dry milk	weigh 1¼ lb.	1	table (scales on table)
Salt	weigh 2½ oz.		table
	transfer ingredients to sink	2	sink
Water	measure 5 qt.		
	mix milk solids, salt, and water		
	heat milk mixture	3	bain-marie
Margarine	weigh 2 lb.	4	table
Flour, all-purpose	weigh 2 lb. 8 oz.		
	heat margarine, add flour to make roux	5	range
	stir roux into hot milk	6	bain-marie
Cheese	weigh 3 lb.	7	table
	chop cheese	8	electric chopper
	stir cheese into sauce	9	bain-marie
	when cheese is melted, remove sauce to table and let cool slightly	10	table
Frozen egg yolks, thawed	weigh 5 lb.; beat egg yolks slightly with wire whip; add small amount of sauce to egg yolks; mix thoroughly and stir into remaining sauce		
Frozen egg whites, thawed	weigh 7 lb. 8 oz.		
	beat egg whites until stiff and almost dry	11	electric mixer
	fold egg whites into sauce carefully	12	table
	divide soufflé into four 12 by 20 in. pans (approximately 7 lb. 12 oz. per pan)		
	bake soufflé at 300°-325°F. for 40 to 50 min.	13	oven
	product out	14	

*Yield: 96 servings (4 pans, 12 by 20 in.; 24 cuts [6 by 4 in.] per pan). Size serving: 1 cut.

menu item, cheese soufflé, was selected as typical of dishes prepared in institutional cafeteria kitchens. Its ingredients require a number of processes using several pieces of equipment. In Table 1, the recipe is tabulated to show the sequence of the processes and the equipment required.

The first cross chart on which the recipe information is recorded is shown in Figure 1. Note that the equipment is listed on both the vertical and horizontal axes so that movements both forward and back may be indicated (as cities are shown in the mileage charts).

The first trip required was from ingredient issue or storage to the table for obtaining and weighing the nonfat milk solids and salt. This trip is shown as *1* in the column under "Ingredient Issue" and opposite "Table" in the horizontal rows. The second trip required was from the table to the sink and is shown on the cross chart as *2* in the column under "Table" opposite "Sink" in the horizontal rows.

The diagonal line on the chart separates the two listings of the equipment, allowing the upper field to show back-tracking movements and the lower field the forward movements. Thus, number *1* on the cross chart occurs below the diagonal line representing the forward movement from ingredient issue to the table, while number *2* occurs above the diagonal line, representing the back-tracking trip from the table to the sink.

All fourteen steps or processes required to produce the cheese soufflé were recorded on the cross chart in the manner described, either above or below the diagonal line as determined by the direction of the trip for each step.

Recordings in the squares adjacent to the diagonal line show the movements made to an adjacent piece of equipment in the sequence. Recordings in squares away from those adjacent to the diagonal line indicate the number of pieces of equipment by-passed, either forward or back in movements between pieces of equipment. Thus, number *13* on the cross chart (Figure 1, in the lower or "To" field) shows a trip from the table forward to the adjacent piece of equipment in the sequence, i.e., the oven, while number *8* in the fifth square away from the diagonal line, indicates a trip from the table to the fifth piece of equipment in the sequence, i.e., a trip forward but by-passing the oven, range, bain-marie, and electric mixer. Similar by-passing trips are shown in the upper or "From" field of the cross chart for back-tracking trips.

The more efficient the equipment layout, the more trips will be shown on the cross chart below the diagonal line and adjacent to or near it, indicating that forward trips predominated and that they were made chiefly in the sequence of the equipment arrangement, with the deviations mostly small ones.

Efficiency of the equipment arrangement was considered to be the ratio of the number of trips forward to the total number of trips. However, to evaluate the layout for the trips which deviated from the equipment sequence, the forward trips

EQUIPMENT SEQUENCE OF FIRST TRIAL

TO \ FROM	INGREDIENT ISSUE	SINK	TABLE	OVEN	RANGE	BAIN-MARIE	ELECTRIC MIXER	ELECTRIC CHOPPER	PRODUCT OUT	TOTAL HORIZONTAL	TOTAL "FROM" TRIPS
INGREDIENT ISSUE										0	0
SINK			2							1	1
TABLE	1					4,7, 10	12			5	4
OVEN			13							1	0
RANGE			5							1	0
BAIN-MARIE		3			6			9		3	1
ELECTRIC MIXER			11							1	0
ELECTRIC CHOPPER			8							1	0
PRODUCT OUT				14						1	0
TOTAL VERTICAL	1	1	5	1	1	3	1	1	0	14	6
TOTAL "TO" TRIPS	1	1	4	1	1	0	0	0	0	8	

EFFICIENCY OF EQUIPMENT LAYOUT

UNITS FROM DIAGONAL LINE	TOTAL FREQUENCIES			
	UNWEIGHTED		WEIGHTED	
	TO	FROM	TO	FROM
1	2	1	2	2
2	2	1	4	4
3	0	3	0	18
4	2	1	8	8
5	2	0	10	0
6	0	0	0	0
7	0	0	0	0
SUB-TOTAL	8	6	24	32
TOTAL	14		56	
EFFICIENCY*	57.14%		42.86%	

* SUB-TOTAL OF "TO" FREQUENCIES DIVIDED BY TOTAL

FIG. 1. *Cross chart for trial sequence for cheese soufflé.*

IMPROVED EQUIPMENT SEQUENCE

TO \ FROM	INGREDIENT ISSUE	ELECTRIC CHOPPER	BAIN-MARIE	TABLE	SINK	ELECTRIC MIXER	RANGE	OVEN	PRODUCT OUT	TOTAL HORIZONTAL	TOTAL "FROM" TRIPS
INGREDIENT ISSUE										0	0
ELECTRIC CHOPPER				8						1	1
BAIN-MARIE		9			3		6			3	2
TABLE	1		4,7, 10			12				5	1
SINK				2						1	0
ELECTRIC MIXER				11						1	0
RANGE				5						1	0
OVEN				13						1	0
PRODUCT OUT								14		1	0
TOTAL VERTICAL	1	1	3	5	1	1	1	1	0	14	4
TOTAL "TO" TRIPS	1	1	3	4	0	0	0	1	0	10	

EFFICIENCY OF EQUIPMENT LAYOUT

UNITS FROM DIAGONAL LINE	TOTAL FREQUENCIES			
	UNWEIGHTED		WEIGHTED	
	TO	FROM	TO	FROM
1	6	0	6	0
2	1	3	2	12
3	2	0	6	0
4	1	1	4	8
5	0	0	0	0
6	0	0	0	0
7	0	0	0	0
SUB-TOTAL	10	4	18	20
TOTAL	14		38	
EFFICIENCY*	71 43%		47.37%	

* SUB-TOTAL OF "TO" FREQUENCIES DIVIDED BY TOTAL

FIG. 2. *Cross chart for cheese soufflé with improved equipment sequence.*

were weighted according to the number of pieces of equipment by-passed, while the back-tracking trips were weighted by twice the number of pieces by-passed. The efficiency of the equipment arrangement was calculated by dividing the subtotal of weighted trips forward by the total of weighted trips both forward and back. In Figure 1, the equipment sequence is shown by calculations of weighted frequencies to have an efficiency of 42.86 per cent (24÷56).

To improve the layout efficiency, the pieces of equipment which showed the greatest number of trip frequencies between them were placed in a revised relationship to each other in the sequence, to minimize back-tracking and by-passing trips. The same menu item, cheese soufflé, was then plotted on a cross chart with the new arrangement of equipment (Figure 2). This arrangement yielded an efficiency of 47.37 per cent (18 ÷ 38), a difference of 4.51 per cent over the first layout, or an improvement in efficiency of 10.52 per cent (4.51 ÷ 42.86).

Procedure

The procedure for the present investigation consisted of the following steps.

A cross chart was made according to the method described above. However, instead of using one recipe, sixteen recipes from eleven menu categories were charted. These recipes represented typical menu items which are frequently produced in institutional kitchens. Most of the recipes also require a number of production steps and/or a number of pieces of equipment. They were:

MENU CATEGORY	MENU ITEM
Soup	vegetable soup
Meats	ham loaf; spaghetti and meat balls

Poultry	creamed chicken on biscuits
Fish	codfish balls
Meat substitute	Welsh rarebit on toast
Vegetables	mashed potatoes, French fried potatoes, French fried onions, Harvard beets
Salads	perfection salad, frozen fruit salad
Pastry	strawberry-pineapple pie
Cake	Wellesley fudge cake
Pudding	coconut cream pudding
Bread, yeast	whole wheat rolls

The recipes for these menu items required sixteen pieces of equipment: bain-marie, chopper, deep-fat fryer, electric mixer, electric peeler, freezer, oven, range, refrigerator, scales, sink, slicer, steamer, steam-jacketed kettle, table, and toaster (gas and electric).

The recipes were tabulated to show the ingredients, the processes, and their sequences with the equipment required, as illustrated in the recipe for cheese soufflé (Table 1).

The optimal equipment arrangement, that is, the equipment sequence with the highest efficiency percentage, was determined and tested by electronic processing to determine its efficiency when used with: (a) seventy-six recipes and (b) for the specific menu categories: meats, vegetables, and desserts.

Distances between pieces of equipment in the optimal sequence were designated, and the efficiency of the sequence with these distance factors included was determined by cross charts for the sixteen recipes and for three individual menu categories: meats, vegetables, and desserts.

Importance factors were also designated for the various menu categories, and the efficiency of the optimal sequence with these importance factors was determined for the sixteen recipes and the three menu categories.

Finally, both distance and importance factors were included in the same cross chart and the optimal equipment sequence was tested for the sixteen recipes and the meats, vegetables, and desserts categories.

TO \ FROM	SLICER	TOASTER	CHOPPER	PEELER	SINK	SCALES	STEAMER	MIXER	TABLE	STEAM-JKT. KETTLE	OVEN	BAIN-MARIE	REFRIGERATOR	RANGE	DEEP-FAT FRYER	FREEZER	TOTAL HORIZONTAL	TOTAL "FROM" TRIPS
SLICER					1												1	1
TOASTER												1					1	1
CHOPPER								1				1					2	2
PEELER						1			1	2							4	4
SINK				5					6	3							14	9
SCALES					2				1	1	2						6	4
STEAMER					4							1					5	1
MIXER							2		15			3		1			21	19
TABLE	1		2		11	5	2	14		12	6	6	3	2	3	1	68	33
STEAM-JKT. KETTLE					1	2	1		16				1	2			28	3
OVEN								1	9	1		1					12	1
BAIN-MARIE		1						4	8	1	1						15	0
REFRIGERATOR					1				3	1							5	0
RANGE					1			1	3								5	0
DEEP-FAT FRYER									4								4	0
FREEZER								1	1								2	0
TOTAL VERTICAL	1	1	2	5	21	8	5	22	67	21	9	13	4	5	3	1	188	78
TOTAL "TO" TRIPS	1	1	2	5	20	7	5	21	44	3	1	0	0	0	0	0	110	

NOTE - NUMBERS IN SQUARES ABOVE REPRESENT TOTAL TRIPS REQUIRED BETWEEN PIECES OF EQUIPMENT BY THE 16 RECIPES

EFFICIENCY OF EQUIPMENT LAYOUT

UNITS FROM DIAGONAL LINE	TOTAL FREQUENCIES			
	UNWEIGHTED		WEIGHTED	
	TO	FROM	TO	FROM
1	41	28	41	56
2	16	7	32	28
3	16	8	48	48
4	20	16	80	128
5	4	10	20	100
6	7	6	42	72
7	1	1	7	14
8	3	0	24	0
9	1	1	9	18
10	1	1	10	20
11	0	0	0	0
12-16	0	0	0	0
SUB TOTAL	110	78	313	484
TOTAL	188		797	
EFFICIENCY *	58.51%		39.27%	

* SUB-TOTAL OF "TO" FREQUENCIES DIVIDED BY TOTAL

FIG. 3. *Cross chart of first sixteen recipes, using Equipment Sequence II.*

Electronic Data Processing

It had been observed that as the amount of data for the cross charts increased, the more time-consuming the recording and calculating became. Therefore, electronic data processing equipment, because of its speed and accuracy in manipulating large amounts of data, was used to produce the cross charts and calculate the efficiency percentages. The use of the electronic data processing equipment (also called automatic data processing equipment or automatic computers) may be briefly described as follows: the problem (in this case, the cross chart method) is first "programmed," that is, translated into the machine language of numbers. The program is fed into the machine on punched input cards or tapes and the program stored in the machine. The machine automatically "reads" the program instructions, classifies, distributes, and computes the data accordingly. The results appear on punched output cards or tapes from which the data is re-coded and printed, thus enabling the investigator to make his interpretations and applications of the results shown.

Electronic data processing equipment is highly valuable in computing problems of complexity or time-consuming routine, particularly when speed is desirable or necessary. However, the value of the results rely on the program. Nett and Hetzler (2)

state that much consideration should be given to programming if the worth of automatic computers is to be realized. Programming requires special training for translating the data into mathematical formulas. Accordingly, an industrial engineer was employed to program the cross chart and the efficiency computations for the present study.

In preparing the problem for automatic computting, the frequencies of kitchen equipment usage for the production of the sixteen recipes were tabulated and the pieces of equipment with the greatest number of usages were placed close together in the first sequence to be tried on the cross chart. The industrial engineer then prepared a program from these data. The automatic computer showed that the efficiency percentage for the sequence was 35.59 per cent. A study was then made of the back-tracking and by-passing trips, and the order of the equipment was changed accordingly. Those pieces of equipment with the greatest number of frequencies of trips between them were placed in a relationship to each other so as to reduce wasteful distances, rather than being placed in rank by their frequency of usage. Of the seven equipment sequences tried, the highest efficiency yielded was 39.27 per cent (Figure 3).[2] This optimal sequence, designated in the study as Equipment Sequence II, was as follows: slicer, toaster, chopper, peeler, sink, scales, steamer, mixer, table, steam-jacketed kettle, oven, bain-marie, refrigerator, range, deep-fat fryer, freezer.

One important adjustment was made in the cross charts in implementing the electronic processing method. In Figures 1 and 2, columns and rows are provided for "Ingredient issue" and "Product out." These spaces provide a means of checking the accuracy of the recordings on the chart. In producing a cross chart by electronic computer, spaces for this purpose are not needed, because re-checking is performed electronically through a "feed-back" system. Thus, these spaces were omitted from the electronically machine-made cross charts. More significantly, by omitting "Ingredient issue" and "Product out," only trips are recorded which actually involve kitchen production processes.

[2]Note that in this cross chart and the others to follow, the numbers in the squares between pieces of equipment represent total trips for all of the recipes, summarized from a corresponding cross chart showing consecutive trips for each individual recipe.

TABLE 2 Efficiency of Equipment Sequence II for ten recipes in each of six menu categories

MENU CATEGORY	EFFICIENCY OF EQUIPMENT SEQUENCE II FOR SIX CATEGORIES OF 10 RECIPES EACH	DIFFERENCE COMPARED WITH 38.15 PER CENT EFFICIENCY FOR SEVENTY-SIX RECIPES
	%	%
Soups	37.71	−0.44
Meats	37.61	−0.54
Vegetables	40.05	+1.90
Desserts	36.29	−1.86
Salads	38.72	+0.57
Sandwiches	41.19	+3.04

Effect of More Menu Items on Layout Efficiency

The efficiency of Equipment Sequence II was tested with an increased number of recipes by including some new menu categories and adding to others previously used, to make a total of seventy-six recipes. Cross charts were then made electronically, using Equipment Sequence II. The efficiency of this sequence was shown to be 38.15 per cent as compared with 39.27 per cent, a decrease of only 1.12 per cent in efficiency (by difference) for the increase from sixteen to seventy-six recipes.

Included in the seventy-six recipes were ten soups, ten meats, ten vegetables, ten salads, and ten sandwiches. The efficiency of Equipment Sequence II for these menu categories calculated by the electronic data processing equipment, is shown in Table 2. The categories which produced an increase in efficiency of the equipment sequence, i.e., vegetables, salads, and sandwiches, typically contain recipes that require a limited amount of equipment or trips. This is notably true of sandwiches; they caused the greatest increase, 3.04 per cent, in the layout efficiency.

The menu categories which produced a minus

TABLE 3 Efficiency of Equipment Sequence II, with and without: distance factors, importance factors, and distance-importance factors

MENU CATEGORY	ITEMS IN CATEGORY	EFFICIENCY OF EQUIPMENT SEQUENCE II	DISTANCE FACTOR		IMPORTANCE FACTOR		DISTANCE-IMPORTANCE FACTORS		
			Efficiency	Decline by difference	Efficiency	Difference	Efficiency	Decline by difference	Degree of loss
		%	%	%	%	%	%	%	%
Varied recipes	16	39.27	38.44	0.83	39.78	+0.51	38.21	1.06	2.70
Meats	10	37.61	35.15	2.46	37.55	−0.06	35.04	2.57	6.83
Vegetables	10	40.05	37.54	2.51	40.05	0	37.54	2.51	6.27
Desserts	10	36.29	35.63	0.66	36.29	0	34.37	1.92	5.29

TABLE 4 Importance factors for menu categories, according to food, labor, or equipment cost or prominence in menu

MENU CATEGORY	IMPORTANCE FACTOR
Soups	
Meat	1.5
Cream	1.5
Meats	6.0
Poultry	3.0
Fish	3.0
Meat substitutes	3.0
Stuffings	0.9
Vegetables	9.0
Salads and relishes	3.0
Salad dressings	1.2
Pies and pastry	3.0
Cake and cookies	3.0
Frostings and fillings	1.2
Puddings	3.0
Sauces	1.2
Breads	
Yeast	1.5
Baking powder	1.5
Sandwiches	1.5
Total	48.0

value, or decline in efficiency, were the soups, meats, and desserts. The greatest decrease was due to desserts, a loss of 1.86 per cent. These minus values indicated that the efficiency of Equipment Sequence II was a little greater for the combined seventy-six recipes than for these three categories, which might indicate that the latter required more involved equipment usage than other menu categories.

Layout Efficiency and Distance Factors

It was felt that the efficiency rating of an equipment sequence would be more valuable in layout planning if distances traveled were shown on the cross chart, not only by frequency of trips from one equipment unit to another, but also in terms of the linear feet traveled. Therefore, the distances between pieces of equipment were designated in feet for Sequence II. These distance factors were: *slicer—6 ft.* ➞ *toaster—7 ft.* ➞ *chopper—8 ft.* ➞ *peeler—4 ft.* ➞ *sink—6 ft.* ➞ *scales—5 ft.* ➞ *steamer—6 ft.* ➞ *mixer—6 ft.* ➞ *table—8 ft.* ➞ *steam-jacketed kettle—5 ft.* ➞ *oven—6 ft.* ➞ *bain-marie—6 ft.* ➞ *refrigerator—10 ft.* ➞ *range—5 ft.* ➞ *deep-fat fryer—8 ft.* ➞ *freezer. Total: 96 ft.*

Cross chart distances were calculated by multiplying the frequencies of trips by the number of feet for each trip from one piece of equipment to another. For example, three trips from chopper to peeler would be recorded on the chart as 24 ft. (3 × 8 ft.). Efficiencies for Equipment Sequence II with the distance factors included are shown in Table 3. By considering distance, the efficiency declined in a range from 0.66 per cent for the ten desserts to 2.51 per cent for the ten vegetables.

TO \ FROM	SLICER	TOASTER	CHOPPER	PEELER	SINK	SCALES	STEAMER	MIXER	TABLE	STEAM-JKT. KETTLE	OVEN	BAIN-MARIE	REFRIGERATOR	RANGE	DEEP-FAT FRYER	FREEZER	TOTAL HORIZONTAL	TOTAL FROM TRIPS
SLICER																	-	-
TOASTER																	-	-
CHOPPER								1									1	1
PEELER									1	2							3	3
SINK				4			1	1	4		1			2			13	9
SCALES					1				1	1	1						4	3
STEAMER					3				3	1		1		1			9	6
MIXER						2			5			1		2			10	8
TABLE			2		9	3	3	7		10	7	6	1	5		1	54	30
STEAM-JKT. KETTLE					1	1	2		11					2			17	2
OVEN					1				11	1		1		2			16	3
BAIN-MARIE							1		5	2	1						9	0
REFRIGERATOR										1							1	0
RANGE					1			1	12	1							15	0
DEEP-FAT FRYER									1								1	0
FREEZER								1									1	0
TOTAL VERTICAL	-	-	2	4	16	4	9	11	54	18	11	9	1	14	-	1	154	65
TOTAL "TO" TRIPS	-	-	2	4	16	4	8	9	40	4	2	0	0	0	-	0	89*	

NOTE- NUMBER IN SQUARES ABOVE REPRESENT TOTAL TRIPS REQUIRED BETWEEN PIECES OF EQUIPMENT BY THE TEN RECIPES —

EFFICIENCY OF EQUIPMENT LAYOUT

UNITS FROM DIAGONAL LINE	TOTAL FREQUENCIES			
	UNWEIGHTED		WEIGHTED	
	TO	FROM	TO	FROM
1	27	16	27	32
2	19	11	38	44
3	12	11	36	66
4	10	9	40	72
5	14	9	70	90
6	5	5	30	60
7	0	2	0	28
8	1	0	8	0
9	1	2	9	36
10-16	0	0	0	0
SUB TOTAL	89	65	258	428
TOTAL	154		686	
EFFICIENCY*	57.79%		37.61%	

* SUB-TOTAL OF "TO" FREQUENCIES DIVIDED BY TOTAL

FIG. 4. *Cross chart of ten meat recipes, using Equipment Sequence II.*

Layout Efficiency and Importance Factors

Some menu categories were considered more important than others because of their raw food and/or production costs, or their prominence or emphasis in the menu (such as entrées and desserts). Thus, it was felt that this factor of importance should be included in the cross chart data and calculated in the efficiency determinations of the layout. Therefore, the various categories were studied for importance and assigned arbitrary importance values or factors

TO \ FROM	SLICER	TOASTER	CHOPPER	PEELER	SINK	SCALES	STEAMER	MIXER	TABLE	STEAM-JKT. KETTLE	OVEN	BAIN-MARIE	REFRIGERATOR	RANGE	DEEP-FAT FRYER	FREEZER	TOTAL HORIZONTAL	TOTAL "FROM" TRIPS
SLICER																	-	-
TOASTER																	-	-
CHOPPER									174								174	174
PEELER									81	315							396	396
SINK				72			66	102	345		216			696			1497	1425
SCALES					36				51	75	180						342	306
STEAMER					132				180	120		93		282			807	675
MIXER							54		126			150		369			699	645
TABLE			420		966	204	144	180		360	468	456	75	1050		144	4467	2553
STEAM-JKT. KETTLE					93	150	240		336					243			1062	243
OVEN					216				780	15		76		264			1351	340
BAIN-MARIE							93		399	99	36						627	-
REFRIGERATOR										51							51	-
RANGE					348			246	2310		132						3036	-
DEEP-FAT FRYER										120							120	-
FREEZER									162								162	-
TOTAL VERTICAL	-	-	420	72	1791	354	597	864	4728	1035	1032	775	75	2904	-	144	14791	6757
TOTAL "TO" TRIPS	-	-	420	72	1791	354	531	588	3945	165	168	-	-	-	-	-	8034	

NOTE – NUMBERS IN SQUARES ABOVE REPRESENT TOTAL TRIPS REQUIRED BETWEEN PIECES OF EQUIPMENT BY THE TEN RECIPES —

EFFICIENCY OF EQUIPMENT LAYOUT

UNITS FROM DIAGONAL LINE	TOTAL FREQUENCIES			
	UNWEIGHTED		WEIGHTED	
	TO	FROM	TO	FROM
1	729	562	729	1124
2	1155	714	2310	2856
3	1026	993	3078	5958
4	1116	888	4464	7104
5	2496	1578	12480	15780
6	1002	900	6012	10800
7	-	426	-	5964
8	162	-	1296	-
9	348	696	3132	12528
10-16	0	0	0	0
SUB-TOTAL	8034	6757	33501	62114
TOTAL	14791		95615	
EFFICIENCY*	54.31%		35.04%	

* SUB-TOTAL OF "TO" FREQUENCIES DIVIDED BY TOTAL

FIG. 5. *Cross chart of ten meat recipes with distance-importance factors, using Equipment Sequence II.*

as shown in Table 4. Cross charts were made for Equipment Sequence II and the trip frequencies of the recipes were multiplied by the importance factors of the categories represented in each case. For example, five trips from mixer to table, of which three were for meats and two for vegetables, were recorded as $(3 \times 6 + 2 \times 9) = 36$.

The efficiency of Equipment Sequence II for the sixteen recipes and for ten meats, ten vegetables, and ten desserts is shown with and without the importance factors in Table 3. The distances had little effect on the efficiency of the optimal equipment sequence as determined for sixteen recipes.

Layout Efficiency Related to Both Distance and Importance Factors

Final evaluation of Equipment Sequence II was made using cross charts which included *both* distance and importance factors, since this would give a more accurate value of the sequence than when only one or no qualifying factors were considered. Calculations were made for the sixteen varied recipes and for ten meats, ten vegetables, and ten desserts.

The distance–importance factors were obtained by the following formula: $(D \times I)F = DIF$, when $D =$ distance factor; $I =$ importance factor, and $F =$ frequency of trips. For example, the DIF value for two trips from sink to table in preparing a cream soup would be calculated as follows (using the following distance and importance factors): $D = 23$, $I = 1.5$, $F = 2$: $DIF = (23 \times 1.5)2 = 69$.

The results of this final evaluation were compared with the efficiencies of the sequence without added factors when used for the same recipes and food groups (Table 3). As shown in Table 3, the distance–importance factors caused the efficiency of the Equipment Sequence II to decline, by difference, from 1.06 per cent for the sixteen recipes to 2.57 per cent. The degree of loss or decline in efficiency was 2.70 per cent for the sixteen varied recipes, 6.83 per cent for the ten meats, 6.27 per cent for the ten vegetables and 5.29 per cent for the ten desserts.

Cross charts, using ten meats for illustration, with and without distance–importance factors are shown in Figures 4 and 5.

Summary and Conclusions

A substantial number of recipes representing the various types of menu items produced in the institutional kitchen were tested on the cross chart to obtain valid information on which to base decisions in layout planning. Various factors, such as those for distances traveled, importance of the menu items, labor and production costs, are significant in planning efficient layouts. The factors investigated in this study were distance and recipe importance. Their effect on layout efficiency was tested by cross chart determinations.

The cross charts showed that the efficiency of an optimal equipment sequence for sixteen typical institutional menu items decreased only slightly as the number of recipes increased. This decrease was from 39.27 per cent for the sixteen recipes to 38.15 per cent for seventy-six recipes, a difference of only 1.12 per cent.

Distance and importance factors added to the cross chart caused a loss in efficiency in the optimal equipment sequence ranging from 2.70 to 6.83 per cent. The meat and vegetable categories caused the greatest loss in layout efficiency. These results might indicate that in planning the institutional kitchen layout, the factors of distance and menu item importance might make it desirable to arrange the equipment with particular emphasis in efficiency

for certain categories of menu items. However, other layout factors must also be considered before a final plan can be recommended.

The values obtained have indicated some of the significant information which may be obtained by the cross chart method. Electronic data processing equipment was useful in the cross chart determinations because of its speed and accuracy in manipulating large amounts of data.

It would be worth while to continue the investigation of the cross chart method so as to study distance and importance factors further and to include other factors pertinent to layout planning, such as production time, labor costs, and the value of additional or duplicate pieces of equipment in layout efficiency, i.e., additional tables, ovens, sinks, and so on.

The cross chart might also be used to determine, from the standpoint of efficiency and economy, whether the various preparation and production functions should be organized into a single unit sharing much of the same equipment or whether separate areas with independent equipment layouts should be provided for the production of vegetable menu items, meats and other entrées, desserts, salads, and so on. Production amounts and menu variety would be important factors in such a determination. A related layout problem which might be solved by the cross chart method is whether a large central kitchen or several smaller decentralized kitchens would be more efficient and economical in situations where many people are to be served, or scattered serving units must be provided for, or a diversity of food services are required.

It has frequently been said that the planning of the successful institutional kitchen must be done by a cooperating team of specialists: the dietitian, the administrator, the architect, and the construction and equipment engineers. Now we must add another member to the team, the industrial engineer, who has contributed the cross chart as a useful tool in kitchen layout planning.

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The Home Economist's Role in Homemaker Services

In April 1959, the Subcommittee on Homemaker Services of the American Home Economics Association's Health and Welfare Section conducted a survey to learn where and how professionally trained home economists* contribute to Homemaker Services. A two-part questionnaire—one section for administrators and another for the home economist—was mailed to the directors of 153 agencies listed in the 1958 *Directory of Homemaker and Related Services* (Public Health Service Publ. 598); of these, 105 (approximately 69 per cent) replied.

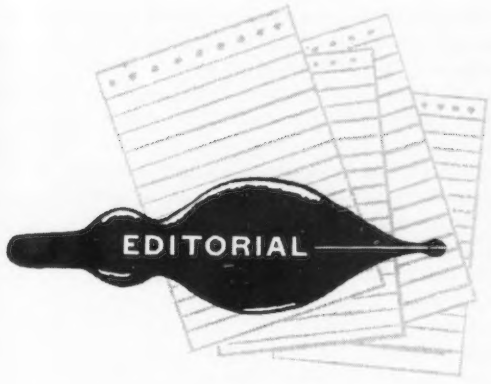
Fifty of the agencies (about 50 per cent) reported that the services of a professionally trained home economist were available to them. Nineteen employed such a person on their staff; 13 had a full-time home economist, 5 a part-time person, and one agency employed both. In 31 of these 50 agencies, the services of such a person were available as a consultant or instructor. In 6 agencies, the home economist's services were used by the professional staff only; in 14, by the homemaker staff exclusively. Ten agencies who used the home economist, did not reply.

Only 35 of the 105 agencies returned the section pertaining to the home economists duties. Thus, generalizations are unwise. However, it appeared that many home economists are concerned with the training of homemakers. At least two-thirds of the 35 agencies reported that their training program included material on food and nutrition, modified diets, household care, and home management. Some agencies included material on child care and development, care of the chronically ill, care of the aged, budgeting, laundering, purchasing, and care of clothing.

In addition to duties related to training, about one-third of the home economists direct the Homemaker Service and about two-thirds recruit and select homemakers. Others are responsible for developing educational and informational materials.

Consultation services can be broken down as follows: 24 home economists serve as consultants to homemaker staffs; 21 to professional staffs; and 18 to clients.—*Contributed by Mary Caroline Egan, Nutrition Section, Children's Bureau, Washington, D. C.; Chairman, Subcommittee on Home Maker Services, American Home Economics Association.*

*As used here, the term "home economist" includes the professionally trained home economist, nutritionist, and dietitian.



Changing Role of the Dietitian[1]

DORIS JOHNSON, Ph.D.

President, The American Dietetic Association; Director of Dietetics, Grace-New Haven Community Hospital and Assistant Professor of Public Health, Yale University School of Medicine, New Haven, Connecticut

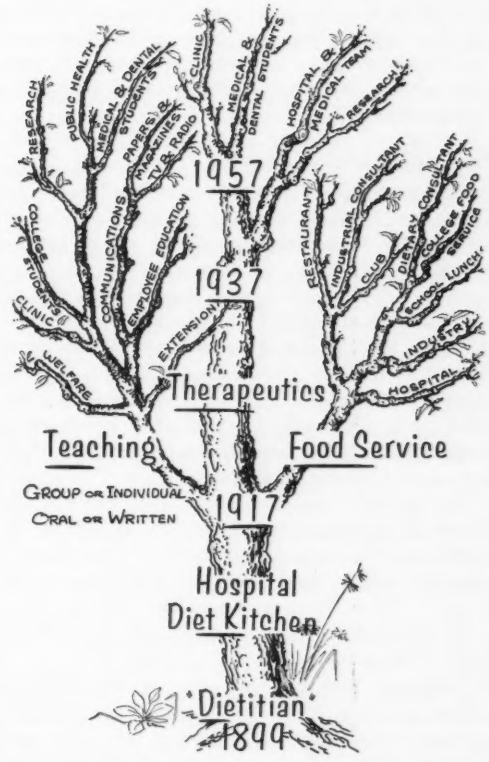
How are changes in the hospital field affecting dietetic internships and continuing education of dietitians?

IF I could be Rip Van Winkle, it might be easier for me to have the perspective I need to evaluate properly the position of the dietitian today. Would a Rip Van Winkle-dietitian of twenty-five years ago find much change on waking today? Certainly she would not find a change in our objectives, for we are still concerned with the maintenance and improvement of human nutrition. But, would she find that the means by which this is accomplished is changed? I think she might be alarmed and amazed at what has happened while she slept.

The "tree," which was developed by the Committee to Study Broadening of A.D.A. Membership, could well serve as the text of this paper to point out the changing role of the dietitian over the years. The changes in the academic requirements for membership in The American Dietetic Association worked out by this committee also indicate the impact of the changing role of the dietitian on the education which she needs to meet the demands of her position.

Let us recall the tree. From the trunk, which was the Hospital Diet Kitchen and the original forte of the dietitian, have grown three main branches—teaching, therapeutics, and food service. Each branch has smaller branches representing the areas in which these three main fields of activity are carried on. Our specialized field of dietetics thus has spread into many areas. Of course, of this, we are proud. It has, however, created problems for us, for we must have adequately trained people to meet the demands of these positions—from hospital to industrial feeding, from nursery school to the World Health Organization.

For the purposes of this discussion, we will speak of the dietitian as she is represented in the hospital field. Space would not permit a similar discussion for all of the other types of work into which she has gone. The hospital dietitian represents approximately half of our membership, and basically it is her training with which we are concerned. As a hospital dietitian, I hope I can give you some feeling of her role today and what effect this has on the requirements of her education and training.



The "tree" of dietetics, showing development of the profession in the twentieth century.

Immediately we must admit that the hospital dietitian has three basic jobs to do. One is the care of patients, or what is often termed "therapeutic dietetics;" another is the production of the food, or what is referred to as "administrative dietetics;" and the third is teaching. In a small hospital, one person may function in all three capacities—and to do this well, she must be a pretty capable individual.

It is in the administrative role of the dietitian

[1]Presented at the Conference of Faculties of College and University Home Economics Department and Approved Dietetic Internships at the 42nd Annual Meeting of The American Dietetic Association in Los Angeles, on August 27, 1959.

that we find the greatest change, but the roles of the therapeutic and teaching dietitians have changed as well. The concept of the diet kitchen has all but vanished; the present concept is that all patients should have the benefit of the dietitian's services, not just those on modified diets. The therapeutic and teaching dietitians are members of the professional team of the hospital. They see all patients; they make regular rounds with the doctors; they teach patients, student nurses, and medical students on a formal and informal basis. They are no longer relegated to an isolated area, but are out in the main stream of patient care. In addition to these phases of their work, they are responsible for the service of food to their patients, which implies the administrative responsibilities of supervision.

The therapeutic and teaching dietitian today is considered and must be, the expert in her field if she is to fulfill her job. *She is there to advise with the doctor in order to accomplish the diet therapy he wishes.* She must have sufficient "know-how" to be self-confident.

Administrative Changes

The administrative dietitian's role has shown the most marked change over the years. Some of the pressures that have been brought to bear on her are a result of the change in concept in the operation of hospitals. Hospitals are now big business and are being operated as such. No longer are they the old-fashioned charitable institutions they once were. "Service" is the key word now, and costs must be accounted for. The head of the department of dietetics must be an executive and must be a part of the administrative team, just as the therapeutic dietitian is a part of the patient-care team. The administrative dietitian must be able to work with the hospital administrator, the purchasing agent, the engineer, the accountant, and the personnel director, among others. She must realize that her department is a part of the whole and not an isolated entity. She must get into the main stream of the administration of the hospital.

Progressive hospitals are introducing business methods, such as work simplification training and supervisory development programs; they are using a research attitude toward all the activities of the institution, but especially so in purchasing and in budgeting, both for supplies and employees.

One fact needs comment at this point. We have said that both the therapeutic dietitian and the administrative dietitian are expected to be the experts in their areas and to advise and consult with physicians and administrators. Usually, however, the physicians and administrators are persons of greater maturity than the dietitians who are expected to advise with them and for whom they serve as consultants. *The young dietitian thus finds this a difficult role to assume.* The physician has always been the person who, up to now, knew all the answers, and it is somewhat of an adjustment now to have an area in which the dietitian is more of an expert. In the case of the administrator, he too often has been only a name and someone from whom all major decisions have come. To help him make these decisions is also somewhat of an adjustment for the young dietitian.

The dietitian who can cope with this great challenge needs not only her dietetic background, but she must be adept in human relations, personnel work, and accounting. She must know how to run a big business, for her department is one of the largest in the hospital from a cost point of view. She must be able to have logical explanations or necessary data to substantiate her requests and decisions.

The administrative dietitian today is considered, and must be, the expert in her field if she is to fulfill her job. *She is there to advise the hospital administrator rather than to seek advice from him in the field of dietetics.* She must be able to tell him what is needed to accomplish the goals set by administration. She, too, must have sufficient "know-how" to be entirely self-confident.

Selling Ourselves

Since society today is so highly competitive, we find ourselves in the position of having to promote ourselves and our objectives. This, too, is part of big business. Next to doing the work itself, the selling of the fact that the decisions we have made and what we have done are correct and proper and will accomplish what is expected is the most important part of the dietitian's job today.

The dietitian who sells herself and her work and, of course, does good work has no need to fear competition of any type. There has been concern about the management of dietary departments by commercial firms. It is not my purpose to debate the merits of this practice, but one thing that the commercial group is noted for is its ability to sell itself. We could takes lessons from them in this respect.

The better commercial firms cannot function without dietitians, particularly the teaching and therapeutic dietitians. It is the administrative dietitian whose position is challenged, and this, again, is an indication of the change in the role of the administrative dietitian. She must be a business woman —an executive—if she is to function adequately.

Although we have said that we must sell ourselves, we must admit that some of our predecessors have done a very good job of it. We would not be in the demand that we are today nor would the proper management of the department of dietetics assume the importance it has if our predecessor dietitians had not done some pretty good selling.

Our problem, then, is how to meet the present-day demand for dietitians, and in particular, administrative dietitians. Perhaps we need to explain better what the duties of the dietitian are in our recruiting program and to give more meaningful experiences in the summer practicum. If there is one word that explains much of the activity of the dietitian, it is the word "supervisor" and all that it connotes. If prospective dietitians could be helped to realize what it means to be a supervisor, their understanding and appreciation of the profession would be greatly enhanced. If, in the summer practicum, the college student can work along with staff dietitians in various units of the hospital rather than be a kitchen maid, she will have a much better understanding of the role of the dietitian.

We have said that "executive" and "supervisor" are words which describe today's administrative dietitian. These words imply that the work of others is directed—that there is delegation of duties. We have given considerable emphasis to the concept of delegating certain duties of the dietitian to less well trained individuals. Perhaps we need to consider even more the delegation of those duties which can be taught to others and to learn how to become real executives and supervisors. Dietitians need to practice delegation and not just give it lip service. There are dietitians who find it much easier to let themselves get caught in web of routine tasks than it is to take the time to delegate and then to supervise those to whom the tasks have been delegated. Some dietitians don't know what to do with the extra time they then have, extra time which could be used for executive and supervisory activities. This, I might add, applies to therapeutic as well as to administrative dietitians.

One of our real needs is to recruit more people into the internships. It has been my observation that, particularly in the small hospitals, our professional problem is that those who operate the dietary departments are not adequately prepared. It is my feeling that the dietitian in the smaller hospital really needs to be much more capable than in the larger hospital where there is more division of duties. Yet it is in the smaller hospitals where we often have the least trained people. The internship not only gives on-the-job training, but it provides an opportunity to mature. It is always a delight as an internship director to see one's interns "grow-up" during the year. This is not to imply that the internship produces a finished product, for in reality no one of us is ever through learning. Nevertheless, it certainly gives a professional finesse that is not accomplished in any other way.

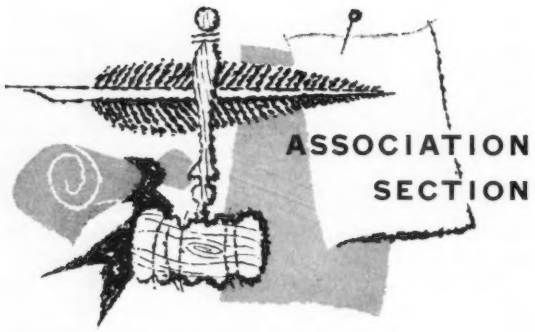
What, then, can be done in the training of the dietetic intern to prepare her as adequately as possible to meet the present-day challenge? Certainly her experiences should be such that she has the opportunity to make decisions, to be in the role of the supervisor, to be placed in situations which help her to mature in judgment and in ability. The more menial tasks which have been given to the dietetic intern should be eliminated and instead, she should supervise those who do these tasks. The intern should become acquainted with administration through actual contact. If she can have occasions to deal with administrators, purchasing agents, and personnel directors, she should gain confidence in her ability to work with these people on her job.

One thing of which we must not lose sight is the value of experience. As one has more and more experience, she becomes more valuable on the job. The position of the dietitian as a professional person is jeopardized when those with inadequate experience are employed in positions of responsibility for which they are not yet equipped. Residencies are one means of better preparing younger dietitians to accept positions of increased responsibility. This added period of supervised experience and study some time after the internship can be a valuable means for our profession to meet the needs for more highly trained people with experience. This area of endeavor needs to be greatly encouraged.

Graduate study is another means, of course, of obtaining further study, but it usually does not give the supervised work experience that a residency does. It is my feeling that many graduate programs in home economics do not really meet the needs of the administrative dietitian today to go back into the hospital and assume the executive responsibility which is expected of her. More courses in business administration, personnel management, human relations, and so on, should be included. More in purchasing, accounting, and even mechanics would be helpful. Our graduate programs in foods and nutrition are somewhat superior to those in institution administration, yet it is in the latter area where we, the hospital dietitians, meet our greatest challenge on the job.

Continuing education in any form is an asset. If it is not possible to do graduate work, summer school, institutes, or work shops are of invaluable assistance in aiding the dietitian on the job to cope better with the challenges of her current role. More of these need to be in administrative areas and should be sufficiently detailed to be of real value.

Now, what has our Rip Van Winkle-dietitian seen? She has seen that the dietitian's role today is one of varied and great responsibility, that she is an executive, a supervisor, a business woman, plus an expert in foods and nutrition and in institution administration. To fill this role, her education must be as varied in subject matter and as thorough as possible to make her the expert she is expected to be. Her education can never stop, if she is to meet the never ending challenge of her position.



A Decade of A.D.A. Committee Work on Civil Defense and Disaster Feeding

The First Nine Years

DOROTHY L. BOVEE

Chairman, A.D.A. Disaster Feeding and Civil Defense Planning Committee, 1953-1959; Food and Nutrition Consultant, American National Red Cross, National Headquarters, Washington, D. C.

WE BELIEVE it is well at times to take stock of past accomplishments, and, with fresh perspective, to set our sights toward the future and the contribution which our profession can make in an area now generally recognized as a permanent part of our national way of life. This report is a review of the development and growth of the Committee on Disaster Feeding and Civil Defense Planning of The American Dietetic Association, through what adds up to nearly a decade of active participation in national defense.

The Committee Is Formed

In 1950-51, the Executive Board of The American Dietetic Association created a Civil Defense Committee as a result of a request from the newly organized Federal Civil Defense Administration (FCDA) that we cooperate in the program for national defense. Lilliam Storms Coover, Ph.D., was appointed the first Chairman of the Committee; she served in this capacity through September 1953.

Committee activities in that first year were mainly concerned with participating in the general orientation and planning sessions conducted by the FCDA and in sitting in on conferences and workshops sponsored by the Women's Activities Division of FCDA. During this year, a registration of our members was carried out as part of the general registration of women volunteers conducted by FCDA.

The early days were full of frustrations for our A.D.A. leaders, who saw clearly where we fit in the civil defense program but had to spend much effort in "educating" FCDA authorities to recognize and use us for the specific function for which we are fitted. This is reflected in one of Dr. Coover's first reports to the Executive Board in which she said, "I could not seem to get our Association into the limelight the first year. However, this year I was determined everyone would learn that there are dietitians, nutritionists, and others trained in quantity food work and that they should be called on for preliminary planning for emergency mass feeding."

The first general session on civil defense to be included in the program of our Annual Meeting was scheduled in 1951 during the meeting in Cleveland. Norvin C. Kiefer, M.D., discussed "Our Role in Civil Defense" (1). His paper bears rereading today, because of his comprehensive understanding at that time of the role the dietitian has played.

In 1951-52, there was increased activity in the whole civil defense program, especially in emergency mass feeding, and greater progress in the cooperation between dietitians and civil defense at state and local levels. The committee kept members well informed and continued to impress on civil defense officials that phase of defense in which we are best equipped to contribute. Anything on emergency mass feeding which came to the committee's attention was picked up and used, thereby attracting the attention and stimulating the interest of CD officials.

At the 35th Annual Meeting in Minneapolis in 1952, we again scheduled a general session on civil defense, with Edith Walker of England as the featured speaker. She told of experiences in emergency feeding in England during World War II (2). The writer also gave a report on the civil defense activities of the District of Columbia Dietetic Association.

Our A.D.A. President was invited to become the official representative of our Association on the Women's National Advisory Committee to FCDA which is composed of representatives of about forty national women's organizations.

A National Advisory Committee on Emergency Mass Feeding to FCDA (NACEF) was organized in 1952-53, and again our Association was invited to appoint an official representative. This committee was made up of persons representing ten to twelve national organizations engaged in various aspects of quantity food service. The writer was appointed to serve as the A.D.A. representative. This committee gave impetus to a training program in improvisation for emergency mass feeding. The first course was conducted at Ft. Lee in March 1953 as a pilot-training demonstration. Members of the NACEF took this course, which was jointly sponsored by the Department of Defense and FCDA. Similar courses were subsequently given at Army posts in all of the FCDA regions. A.D.A. representatives were invited to participate in each of the eleven courses offered,

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and eighteen members from sixteen state dietetic associations participated.

At our annual meeting in Los Angeles in 1953, we featured an early morning emergency breakfast demonstration which was put on in Griffith Park by the Los Angeles Civil Defense organization and the city's Red Cross Chapter. The breakfast was one of the outstanding functions of the week and substituted for a general session on the formal program. It was attended by a large number of our members.

The Reigns Change Hands

In 1953-54, Dr. Coover retired as Chairman of the Association's Committee and the writer was appointed to carry on the work of the Committee.

The success of the regional training courses served as a stimulus, and this year was one of increased enthusiasm, activity, and accomplishment by individual members and state dietetic associations. The NACEF actively worked during the year in giving guidance to FCDA on policy, organization, and implementation of state and local emergency feeding programs. Plans for participating in Operation Cue, which was to be carried out at the Nevada Atomic Proving Grounds, were also initiated.

Forty-seven state dietetic associations and Hawaii had by now created civil defense committees and appointed chairmen. Considerable publicity appeared in state bulletins, the *Courier*, and the JOURNAL on state and local civil defense activities and projects. Materials and manuals on emergency mass feeding, prepared by dietitians and dietetic associations, also began to appear in print.

Our A.D.A. participation in Operation Cue, the atomic test at Yucca Flats in May 1955, was the big event and the big civil defense contribution for the year 1954-55. Three of our members served on the sixty-man emergency feeding-team—Elsie Wells Russell of the California Dietetic Association, Hazel A. Fehlmann of the Colorado Dietetic Association, and the writer as the A.D.A. representative on NACEF. Operation Cue was conducted jointly by the Atomic Energy Commission, the Department of Defense, and FCDA to demonstrate the kinds of responsibilities civilians would have to assume in their communities in the event of a nuclear disaster. We fed two thousand persons on the desert for nine days and nights prior to and again on the day of the atom bomb shot. The A.D.A. Civil Defense Committee submitted reports of this project which were published in the JOURNAL (3-5).

During this year, too, many individual members reported that they were serving as consultants on state and local civil defense planning committees. Emphasis was also being placed on the emergency feeding aspects of hospital disaster planning, and an increasing number of dietitians were serving as instructors of disaster feeding to community groups. At the same time, requests from the membership for assistance in organizing civil defense programs and for helpful materials and aids increased.

When FCDA headquarters moved to Battle Creek, Michigan in 1954, Evelyn Anderson, then with the Michigan Department of Health, was appointed to represent A.D.A. on the NACEF.

At a general session on civil defense during the 38th Annual Meeting in St. Louis in 1955, Edwin P. Laug, Ph.D., of the Food and Drug Administration, gave our membership his first official report on Operation Teapot, which was a part of the atomic tests of the previous year. He spoke about the effects of initial radiation on the various foods which had been placed very close to the point of bomb detonation.

In 1955-56, A.D.A. was invited to participate in the field tests of the Civil Defense emergency hospital units, the first of which was conducted by FCDA in cooperation with the Department of Defense at Ft. Meade, Maryland. A similar test was later carried out at Ft. Sam Houston, Texas. The purpose of these tests was to develop basic procedures, staffing, and organizational patterns essential to setting up and operating an emergency hospital. Serving as a member of the Food Analysis team, the writer represented A.D.A. at the Ft. Meade test and Major Katharine Manchester, AMSC, covered the second one at Ft. Sam Houston.

During the Annual Meeting in Milwaukee in 1956, the committee conducted a lively group discussion session, "What Are We Accomplishing in Civil Defense?" At that time, we took a problem census to determine some of the unmet needs of our members in civil defense. We learned then that members were eager for guidance in developing departmental plans for their hospital dietary departments.

The Committee Is Enlarged

During the following year, in 1956-57, the Committee Chairman recommended to the Executive Board that the A.D.A. Civil Defense Committee (which up to that time had been a one-person committee) be enlarged and that the name be changed so that it would more accurately describe the present-day needs and interests of the membership. It was obvious then that dietitians were beginning to think more realistically in terms of disaster feeding on the job in natural as well as war-caused disasters, rather than in the broad area of community civil defense planning.

The Board approved the recommendation, and

[1]Betty Brantley, Louisiana; Julia Edwards, District of Columbia; Mary Ford, Wisconsin; June Foss, South Dakota; Isabelle Hallahan, New York State; Marion Jones, New York State; Maj. Katharine Manchester, AMSC, Texas; Elsie Wells Russell, California; and Vera Tharp, Illinois.

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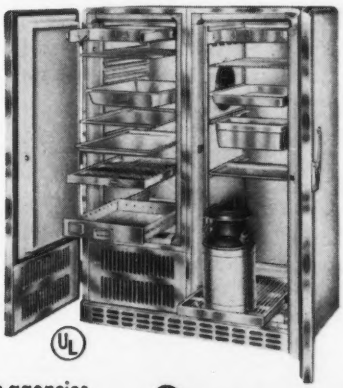

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nine members[1] were appointed to serve on the Committee as area representatives. The name was changed to "Committee on Disaster Feeding and Civil Defense Planning." These changes were prompted by a steady increase in the volume of requests for guidance on disaster feeding, especially for hospital dietary departments, which resulted from a policy announced by the American Hospital Association that every hospital must have a disaster plan to qualify for accreditation.

An Institute on Disaster Planning, the first to be held, was conducted jointly by the American Hospital Association and the Illinois Hospital Association in Chicago in the spring of 1957. Beulah Hunzicker represented our Association at this Institute, and the writer attended as Chairman of the Disaster Feeding Committee. Through discussion and role playing, participants demonstrated the development of hospital departmental plans and their coordination into a master plan. Similar institutes were later conducted by several other state hospital associations and many A.D.A. members took part in them.

At our 40th Annual Meeting in Miami in 1957, another general session on hospital disaster planning and preparedness was planned. Unfortunately, the scheduled speaker was unable to attend because of illness, but a prominent person from the Miami Civil Defense organization, who had had considerable disaster experience, was able to serve as a substitute. His impromptu talk concerned the effects of disaster on the community. A small conference session was also well attended and filled with lively discussion on the various contributions which the dietitian can make in civil defense to her community, on her job, and in her home.

The National Women's Advisory Committee to FCDA initiated regional meetings during this year, to which our Association sent regional representatives. These meetings have continued each year since, and we regularly send representatives.

The Last Two Years

In 1957-58, the committee developed an "Annotated Bibliography on Disaster" as its yearly project (6), and also contributed two special articles on first-hand experiences of dietitians in disaster feeding which were published in this JOURNAL (7,8). Members of the North Carolina Dietetic Association also developed a set of guide-lines for hospital dietary departments which the committee reproduced and made available to other members and state associations.

During this year, a reorganization of FCDA was effected as a result of the merger of FCDA and the old Office of Defense Mobilization. The new organization is now called the "Office of Civil and Defense Mobilization" (OCDM), with Gov. Leo A. Hoegh as the Director. The NACEF has been inactive since this reorganization, but we continue to take an active part in the program of work of the Women's National Advisory Committee.

At our Annual Meeting in Philadelphia in 1958, we again had a general session on Civil Defense, with John Hatfield, II, as speaker. His subject was: "Your Responsibility and Mine in Disaster Planning." The meeting was well attended.

Last year, our Committee set up and implemented its program rather late in the year. No new projects for 1958-59 were initiated, although an effort was made to collect reports from state associations and individual dietitians on dietary plans for disaster and first-hand experiences of dietitians who have been through disasters. Results were not very productive, even though we know that many of our members have experienced disaster and could give valuable clues and help to others.

During our Annual Meeting in Los Angeles last summer, we again had a general meeting on civil defense, entitled "Living in the Atomic Age." Robert A. Jakoubek spoke on the effects of natural disaster on a community. Sallie J. Mooring of the North Carolina Dietetic Association discussed that state's guide-lines, mentioned above, and Simon Kinsman, Ph.D., spoke on "Radiation, Diet, and Radio-Activity." A small conference session was also scheduled.

Your chairman requested to be relieved of the chairmanship after an interesting and rewarding six years of leadership and service to the work of The American Dietetic Association in this important area of national defense.

From this summary review of the progress made by our Association, it is clear that we have come a long way from the early days when "educating" Civil Defense officials was the most important objective to the present day when a great many of our state and local associations are deeply involved in civil defense programs and activities; when dietitians are not only *known* for their talents and for the contributions they can make to the feeding aspects of civil defense, but are actively sought to provide leadership and to take part in the on-going preparedness programs for the defense of our country. In my humble opinion, we have a right to take pride in our accomplishments thus far.

A Look to the Future

VERA THARP

Chairman, A.D.A. Disaster Feeding and Civil Defense Planning Committee, 1959-60; Illinois Department of Public Welfare, Springfield

THE FUTURE objectives of our Committee can best be summed up in the objectives of the course in "Management of Mass Casualties," held at Walter Reed

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*Pareira, M. D.: Conrad, E. J.; Hicks, W., and Elman, R.: J.A.M.A. *156*:810-816 (Oct. 30) 1954.

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Army Institute of Research, Walter Reed Army Medical Center, from September 14 to 19, 1959: *To learn how to motivate people to wish to learn not only how to take care of themselves and their families in a major disaster, civilian or enemy caused: but also how best to help the community and the nation, should need arise.*

It was my privilege, as Chairman of the Committee, to represent The American Dietetic Association at this five-day course, bringing to five the members who have attended similar courses in the past several years. A total of 6200 students from all branches of the Armed Forces, federal agencies, and civilian organizations have attended these courses given at this Center and at Brooke Army Hospital in Texas. Since most of those attending were paramedical persons, stress was laid on how they may learn to make the best possible use of their time, skills, and know-how, so that the nation may survive a nuclear war.

The need for preplanning and the integration of the individual hospital's plan into the over-all community plan was stressed. Plans are vital, so that, in a crisis, mass panic may be avoided and effective behavior result. Human energy will be greatly reduced, due to the increased number of incapacitated, mentally ill, and the dazed, hopeless, and malnourished, according to one speaker.

In addition mass casualties may have radiation sickness as well as their other injuries. The task of the paramedical personnel will not only be to reduce the load in feeding, housing, and medical care, but also to become leaders. Continuing education of all specialists is necessary, *and* they should aid in the training of the civilian population.

The above philosophy is reflected in our committee's objectives for the year, which are as follows:

(a) To continue the project of collecting disaster plans of individual dietary departments. Since hospitals must now have disaster plans before receiving full accreditation, dietary departments must develop workable plans.

(b) To continue the project of collecting first-hand disaster experiences of our own members. Many dietitians have had experiences in floods, tornadoes, hurricanes, power failures, or other extreme natural emergencies. Reports of such experiences can be of great value to others who have not undergone such ordeals. It is hoped that by the end of the current year, the results of the above two projects may be combined into a manual which may be used to help those charged with this responsibility.

(c) To continue to recruit instructors for the American Red Cross-Civil Defense Emergency Mass Feeding Course. Trained people are our greatest asset in time of disaster. Our retired members, both military and civilian, and our dietitian-homemakers are urged to volunteer their services in this program.

(d) To cooperate with and give support to the New Home Preparedness Award Program. This incentive program is designed to reach every home in the nation, through the many women's organizations throughout the country. Full home preparedness can be another strong deterrent to war—because "no enemy will dare strike the nation that can survive and recover," according to Gov. A. Hoegh, Director, Office of Civil and Defense Mobilization.

(e) To encourage state and local dietetic associations to initiate disaster feeding and civil defense planning committees in their own groups.

(f) To revise the "Annotated Bibliography on Disaster Feeding." It is necessary that we keep our list of resource material current, for the total civil defense picture is constantly being altered, with new information being released and other information rendered obsolete. It is hoped that copies of this revision will be available to the members at the Annual Meeting in Cleveland.

We look forward hopefully to the next decade. With our increasing awareness of the need for preplanning and pretraining, we will continue to accept our responsibilities, as members of a profession dedicated to the Latin motto on our official seal, which translated means "to benefit as many as possible."

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A restaurant in White Plains, New York has effected a 25 per cent savings in cream costs by the use of 4-oz. pitchers placed on the table, instead of individual creamers. The use of the pitchers makes the restaurant look more generous. —*From The Montague Messenger, August 1959.*

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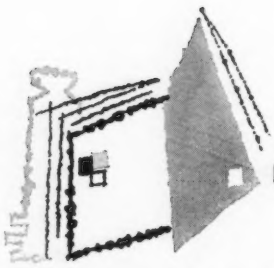

BOOK REVIEWS

Alcoholism. The Nutritional Approach. By Roger J. Williams. Austin, Texas: The University of Texas Press, 1959. Cloth. Pp. 118. Price $2.50.

Dr. Roger Williams, the author of this book on alcoholism, is an eminent biochemist. He has received recognition for his work on vitamins and more recently has made contributions concerning biochemical individuality. He has also done much to stimulate research on the physiologic aspects of alcoholism. He suggests that the genetotrophic principle applies to alcoholism. The word "genetotrophic" is derived from "genetro"—heredity and genetics—and "trophic" which refers to feeding or nutrition. Dr. Williams and other investigators found that laboratory rats exhibited a high degree of individuality in their behavior and also in alcoholic intake. When rats were placed on diets deficient in certain nutrients, they showed increased alcohol consumption, and when the missing nutrients were replaced, the alcohol consumption fell to low or pre-experimental levels. However, Lester and Greenberg of Yale have questioned the preferences of rats to alcohol when on deficient diets.

Alcoholism is one of the most serious health problems in this country. Its impact is far reaching, as it affects the individual, the family, and social and economic situations. Research into its causes and prevention should be pursued in the clinic, laboratory, and field. We do not believe that preventions and cures should be published in books for the lay public without adequate clinical and field trials. There has been no research up to the present time that has been sufficiently controlled to enable any investigator to make a *carte blanche* recommendation that food supplements, vitamins, fatty acids, amino acids, or combinations of the above will obliterate the craving for alcohol of confirmed alcoholics. We deplore the use of letters of testimony from spouses of alcoholics, such as the author used in Chapter IX. Such information cannot be considered as controlled studies. These testimonials cannot even be called "case histories," as the experiences were not conducted by a physician. Abstinence from drinking for certain periods has been experienced by many alcoholics, and for a variety of reasons and with various types of therapy. In this reviewer's experience, abstinence from drinking occurred in some alcoholics receiving placebo therapy as well as those receiving supplements of vitamins and unsaturated fatty acids.

While we admire the motives which prompted Dr. Williams to publish this book and to donate any profits from its sale to Alcoholics Anonymous, we doubt that over a period of time, nutritional supplements as have been suggested will provide the alcoholic with whatever factors he needs to stop drinking or to become a moderate drinker. We also take exception to the statement on page 108: "Recognition of the danger (alcoholism) should be possible and even if the danger should be non-existent, the individual will never be damaged by eating wisely or taking moderate amounts of nutritional supplements." We believe that all should eat wisely, but we do not think that all people should be encouraged to take "moderate amounts of nutritional supplements." There is far too much indiscriminate dosing with vitamins and other unnecessary food supplements. Statements such as this only add fuel to the unwarranted claims of the unscrupulous medicine man. —*Martha F. Trulson, Sc.D., Department of Nutrition, School of Public Health, Harvard University, Boston.*

Remedies and Rackets. The Truth about Patent Medicines Today. By James Cook. New York: W. W. Norton Co., 1958. Cloth. Pp. 245. Price $3.75.

The author of this valuable presentation is the chief medical writer of the New York *Post*. He has described and documented (naming names) the prevalence and the tragedy of nostrum quackery in the United States today. The seriousness of the problem is emphasized whether vitamin pills, cancer cures, or tired blood happens to be the subject under consideration. Quackery in nutrition is well described. More important, the author presents information relating to a broad spectrum of quackery in many areas of medicine.

The book is highly recommended for all dietitians and nutritionists. Furthermore, it will prove helpful when patients want "to be shown" that their kind of faddism is founded on something less than the science of nutrition.

The author will amuse and outrage the reader. Above all, he will help members of our profession to recognize that the problem of quackery in nutrition is an important part of the total efforts to mislead the public by those whose eagerness for financial gain knows no bounds.

The introduction was written by Oliver Field, Director, Bureau of Investigation, American Medical Association.—*Adelia M. Beeuwkes, Associate Professor of Public Health Nutrition, University of Michigan School of Public Health, Ann Arbor.*

The General Foods Kitchens Cookbook. By the Women of General Foods Kitchens. New York: Random House, Inc., 1959. Cloth. Pp. 448. Price $4.95 (de luxe edition including wrought iron holder, $7.50).

Unique in presentation, this is the first major cookbook to be arranged by meal situation. It was written and assembled by some 120 women of the General Foods Kitchens in response to homemakers' desires for a book that would give them practical help on everyday meal situations as well as for unusual and special occasions. Ten types of situations are covererd in as many chapters: Family Meals, Company for Dinner, Cooking "Native" Meals from Home and Abroad, Daytime Entertaining, It's a Party, Home for the Holidays, The Family Milestones, The Meals Outdoors, How to Feed a Crowd, and How to Rise to the Occasion.

A running commentary on table settings, menus, and the background for various occasions is placed alongside the appropriate recipes. Consequently, this is not a cookbook to be picked up and used hurriedly—at least at first. Thorough acquaintance with the contents and organization of the material is necessary if the book is to be used creatively. Especially is this true for creatures of habit who are used to finding all recipes of one type in one place. An index does list recipes by type (biscuits, salads, cakes, and so on) but there is no way of comparing ingredients at a glance.

The ideas and recipes included are tempting and attractive. The meal situation approach should be particularly helpful to an inexperienced homemaker or one who feels the need for new or better ways of presenting food for any occasion to her family and friends.—*Margene A. Wagstaff, Elmhurst, Illinois.*

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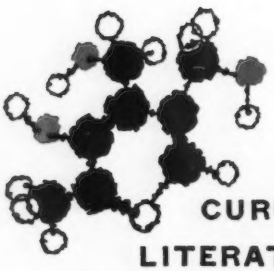

CURRENT LITERATURE

Contributed by Janette C. Carlsen, The Johns Hopkins Hospital, Baltimore; Clara Karl Frederick, University of Chicago Clinics; Elizabeth Tuft, Chicago Wesley Memorial Hospital; Margne A. Wagstaff, Elmhurst, Illinois; and the JOURNAL *staff.*

THE AMERICAN JOURNAL OF MEDICINE

Vol. 28, March, 1960

*The effect of sodium loading and depletion on muscular strength and aldosterone excretion in familial periodic paralysis. P. T. Rowley and B. Kliman.—p. 376.

Sodium and Muscular Strength. Two patients with familial periodic paralysis were studied with regard to the effect of sodium loading and depletion on muscular strength and on resistance to measures disposing to muscular weakness. Sodium loading was achieved by dietary excess or by administration of 2-methyl-9 alpha-fluorohydrocortisone. Sodium depletion was accomplished by dietary restriction or by administration of a mercurial diuretic or SC-8109, a spirolactone with an action antagonistic to aldosterone. No loading was in general associated with a decrease, and sodium depletion associated with an increase in strength and in resistance to measures disposing to weakness. Urinary aldosterone excretion, measured by a double isotope derivative technique, was normal prior to two spontaneous attacks and, as in normal persons, rose with sodium depletion and fell with sodium loading.

AMERICAN JOURNAL OF PUBLIC HEALTH

Vol. 50, March, 1960, Part I

*What research in motivation suggests for public health. I. M. Rosenstock.—p. 295.

Vol. 50, March, 1960, Part II

*Nutrition and heart disease. J. Mayer.—p. 5.

Motivation Research. Although the public health worker is action-oriented, he is realizing more and more that individuals must be motivated to take necessary action. This paper reveals what has been found by some social scientists concerning motivation research. The three major principles of motivation discussed may be summarized briefly. (a) Preventive or therapeutic behavior relative to a given health problem in the individual is determined by the extent to which he sees the problem as threatening and the extent to which he believes that some course of action open to him will be effective in reducing the threat. (b) Behavior emerges out of frequent conflict among motives and among courses of action. Where motives themselves conflict and compete for attention, those which have the highest value will actually be aroused. Health matters—at least in the individual who believes himself to be healthy—are probably not as potent as are certain other motives, especially economic and social ones. Where the conflict is based on the belief that no available course of action will be effective or that a prescribed course of action will create more serious problems, the conflict may be resolved in a variety of maladaptive ways. (c) Health-related motives may not always give rise to health-related behavior, and conversely health-related behavior may not always be determined by health-related motives.

Nutrition and Heart Disease. In this article, Dr. Mayer points out that there is a correlation between overweight and heart disease, but there are a number of qualifications which must be kept in mind. Overweight appears to be only one of the many contributory factors involved. He also presents the possibility that both overweight and heart disease may be due in part to the same factors, rather than one "causing" the other. The relationship of atherosclerosis and heart disease to nutritional factors other than calories has been associated in at least three different ways: (a) the possible direct linking of coronary disease to nutrition and particularly to fat intake; (b) the possible linking of nutrition to cholesterol metabolism, leading to a possible relation of cholesterol levels to coronary disease; and (c) the possibility of a relationship of fat intake either to atheroma or thrombosis as components of coronary disease with emphasis on clotting time; this is supported by claims of increased and more prolonged rise in blood lipoids following ingestion of fat in coronary patients.

ANNALS OF BIOCHEMISTRY AND EXPERIMENTAL MEDICINE (India)

Vol. 19, November, 1959

*Studies on milk substitutes of vegetable origin. Part I. The nutritive value of milk substitutes prepared from soyabean and groundnut. S. R. Shurpalekar, N. L. Lahiry, M. R. Chandrasekhara, M. Swaminathan, K. Indiramma, and V. Subrahmanyan.—p. 269.

*Studies on the effective minimum dose of hydrolysed glucose cyclo-acetoacetate for the prevention of saturated fat and cholesterol induced lipaemia. A. Saikia, D. M. Brahmankar, and M. C. Nath.—p. 275.

Milk Substitutes. As the production of milk in India and other Asian countries, Africa, and Latin America is highly inadequate to meet the population requirements, the need of milk substitutes is great. In this study, the nutritive value of soybean milk, groundnut (peanut) milk, and their blends was investigated. Experiments on rats showed that these substitutes promoted fairly good growth. A mixture of four parts of vegetable-milk blend and one part of modified reconstituted cow's milk promoted significantly higher growth than the vegetable-milk blend alone. The protein efficiency ratio of the proteins was also studied.

Hydrolyzed Glucose Cyclo-Acetoacetate and Serum Lipids. The hydrolysate of glucose cyclo-acetoacetate (GCA), when used alone or in combination with essential fatty acids, is more effective than essential fatty acids alone or in combination with vitamin B_{12} in maintaining serum and tissue lipids or total cholesterol:lipid phosphorus ratio within the normal limits. In this paper, the effect of hydrolyzed GCA, at different dosages on plasma and tissue levels or cholesterol, lipid, and lipid phosphorus in saturated fat plus cholesterol-induced lipemia was studied. Doses of 60 to 80 mg. per 100 gm. body weight of hydrolyzed GCA maintained these factors near the normal level and helped proper growth in animals. The minimum effective dose of GCA to check the rise of liver fat was found to be 80 mg. per 100 gm. body weight.

BRITISH JOURNAL OF NUTRITION

Vol. 14, No. 1, 1960

*The effect of various dietary fats, especially butter and some margarines, on blood cholesterol in rats. J. P. Funch, E. Nielsen, and H. Dam.—p. 1.

*Commercial breads as sources of vitamin E for rats as determined by the haemolysis test. I. M. Sharman and P. J. Richards.—p. 85.

*The cutaneous loss of nitrogen compounds in African adults. S. J. Darke.—p. 115.

Dietary Fat and Blood Cholesterol. The effect of various dietary fats—whole butter and fat mixtures made into whole margarines—on the blood cholesterol level in rats was investigated. The butter diets consistently caused signifiantly higher blood-cholesterol levels than did the diets with margarines containing large amounts of hydrogenated whale oil. A change from these margarines to corn oil resulted in raised serum cholesterol, but a similar change from the other margarines or butter had no such effect. This finding, that substitution of a dietary fat containing high amounts of linoleic acid (corn oil) for a fat containing small amounts (a hydrogenated whale oil margarine), is contrary to what might be expected from results in man, in whom the ingestion of highly unsaturated oils generally results in lower serum cholesterol. However, the composition of the basal diet seems to exert a decisive influence on the way in which dietary fat changes blood cholesterol in rats.

Breads as Sources of Vitamin E. Tocopherols in wheat flour are largely destroyed on treatment with chlorine

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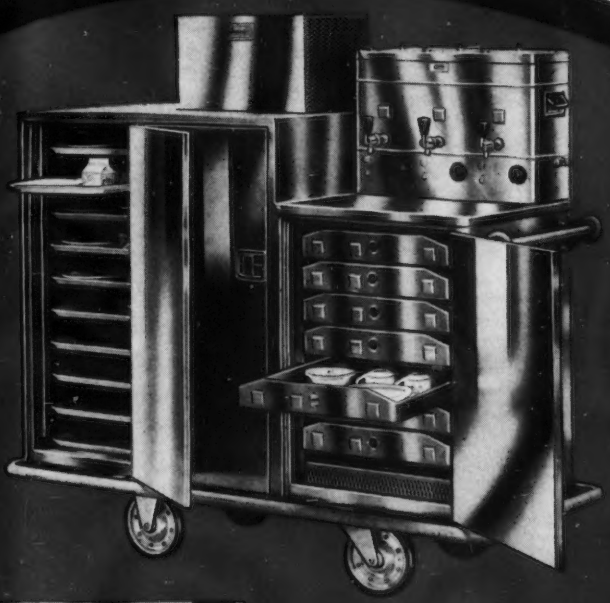

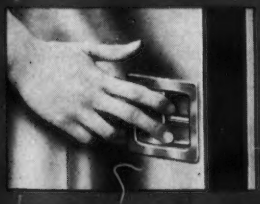

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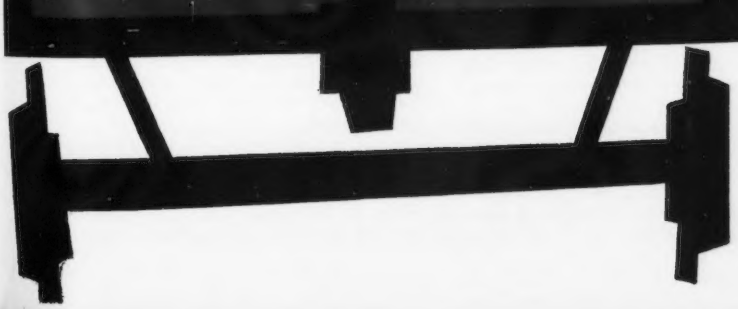

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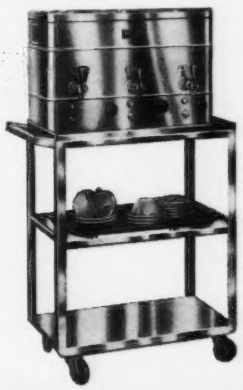

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dioxide, and rats fed bread made from this flour develop signs of vitamin E deficiency. In this study, vitamin E deficiency was indicated by hemolysis of the rats' erthrocytes by dialuric acid. Several breads were tested. A commercial white bread, representative of the greater part of bread consumed in Great Britain, did not contain sufficient vitamin E to prevent deficiency in the rat.

Cutaneous Nitrogen Loss. Determinations of total cutaneous loss of nitrogen were carried out on twelve male adult African subjects by a technique in which the washings from the skin and a sweat-suit were analyzed. This study was undertaken primarily to insure that nitrogen balances carried out under local tropical conditions were not invalidated by an underestimate of cutaneous nitrogen loss. The mean total daily nitrogen loss was 254 mg. (standard error, 22.9). The washings were analyzed for urea, ammonia, creatinine, lactic acid, and chloride; the mean total daily excretion of these substances is given.

CEREAL CHEMISTRY

Vol. 37, March, 1960

*Effect of flour lipids and some lipid derivatives on cookie-baking characteristics of lipid-free flours. E. W. Cole, D. K. Mecham, and J. W. Pence.—p. 109.

*Effect of freezing, defrosting, and storage conditions on the freshness of dinner rolls and cinnamon rolls. K. Kupl and W. G. Bechtel.—p. 170.

Pilot-plant studies on the continuous batter process to recover gluten from wheat flour. R. A. Anderson, V. F. Pfeifer, E. B. Lancaster, C. Vojnovich, and E. L. Griffin, Jr.—p. 180.

Treatment of wheat with ionizing radiations. V. Effect of gamma radiation on some enzyme systems. P. Linko and M. Milner.—p. 223.

Flour Lipids and Cookie-Baking. The effect of flour lipids and some lipid derivatives on cookie-baking characteristics of lipid-free flours is presented in this study. Cookies baked from lipid-free flours were generally darker brown and had smaller diameters than those baked from untreated flours. When lipid-free flours were supplemented with the phosphorus-free fraction from flour oil, no improvement occurred in the cookie-baking quality of these flours. The phosphorus-containing fraction, however, produced complete recovery of cookie characteristics. Soybean or corn phosphatide preparations and a purified soybean lecithin also brought about a similar improvement.

Freshness of Frozen Rolls. The effect of different conditions of freezing, frozen storage, and defrosting on the freshness and firmness of dinner rolls and cinnamon rolls was studied. Wrapped rolls can be frozen and stored at 0°F. and at −20°F. for at least two months without critical decrease of freshness. Rapid firming and loss of freshness occurred during storage at 10°F. or above. It is undesirable to defrost rolls unwrapped in view of an appreciable moisture loss.

DIABETES

Vol. 9, March-April, 1960

*Tolbutamide-induced improvement in carbohydrate tolerance of young people with mild diabetes mellitus. S. S. Fajans and J. W. Conn.—p. 83.

*Malabsorption syndrome and diabetes mellitus. E. P. Taxay, S. Roath, and S. Mitchel.—p. 106.

Tolbutamide-Induced Improvement in Young Diabetics. In this study, carbohydrate tolerance improved or became normal in thirteen of fourteen, young, nonobese patients with diabetes over a period of two to twenty-two months. Normalization of the response to a glucose load, as well as occurrence of fasting and postprandial hypoglycemia, suggests increased insulin secretion as a mode of action of tolbutamide in these patients. It is suggested that these studies could have important bearing on the problem of prevention of diabetes.

Malabsorption and Diabetes. A case of malabsorption syndrome associated with diabetes is reported. Only recently have such cases been reported in the literature. In this case, the patient's initial complaint was in reference to hypoprothrombinemic hemorrhages, an unusual way for a malabsorption syndrome to bring itself to the clinician's attention.

FOOD AND NUTRITION NOTES AND REVIEWS (Australia)

Vol. 16, November-December, 1959

*Thiamine in canned foods. K. T. H. Farrer.—p. 97.

*Cholesterol in the Australian diet. N. E. Kirk.—p. 102.

Thiamine Losses in Canning. Since there is no enrichment program in Australia, the conservation of thiamine in all foods is most important. Many people regard canned foods as being nutritionally inferior to fresh foods. Thiamine is the factor most likely to justify such a criticism. A study of canned foods is presented here. It is shown that losses on canning are comparable with those sustained in the kitchen. Also, since the canner cans fresh foods, whereas the homemaker frequently cooks somewhat less than fresh foods, there is no reason to believe that the quantities of thiamine obtained from canned foods are any less, weight for weight, than those obtained from home-cooked foods. On the other hand, thiamine losses continue on storage, unless stored at 5°C. or lower, and may be as high as 20 per cent in a year.

Cholesterol in the Australian Diet. The most up-to-date guide to Australian dietary intake is the "Annual Report on Food Production and the Consumption of Foodstuffs and Nutrients in Australia." For the year 1956-57, cholesterol consumption was calculated at 730 mg. per person per day. This figure is for foods available and does not show actual consumption. No adjustments are made for cooking waste, kitchen losses, or for food used in feeding domestic animals. This national average does not show regional, racial, or economic differences.

FOOD RESEARCH

Vol. 25, March-April, 1960

*Ascorbic acid studies on chilled, fresh, and fermented orange juice. M. P. Lamden, C. E. Schweiker, and H. B. Pierce.—p. 197.

*The stability of ascorbic acid in frozen and bottled acerola juice alone and combined with other fruit juices. K. O. Fitting and C. D. Miller. p. 203.

*Composition of some South Pacific foods. F. E. Peters, M. Tomono, and P. A. Wills.—p. 211.

*Taste interrelationships. R. M. Pangborn.—p. 245.

Ascorbic Acid Studies on Orange Juices. The average reduced ascorbic acid concentration of commercial chilled orange juices used in this study was 27.12±11.2 mg. per 100 ml., only 57 per cent of the value for juice from fresh oranges purchased locally and 55 per cent of the value for fresh orange juice given in Agriculture Handbook No. 8. Where reduced ascorbic acid was present in low amounts compared with fresh juice, the amounts of dehydroascorbic acid and diketogulonic acid were relatively high. A given brand of chilled juice delivered to the home did not have the same ascorbic acid content as the identical brand sold in the grocery. The ascorbic acid content of fresh juice refrigerated at 4° to 5°C. decreased 25 per cent during four weeks and did not increase substantially in oxidized forms until two weeks later. Fermentation with yeast considerably enhanced the stability of ascorbic acid in orange juice stored at room temperature. Bubbling carbon dioxide through orange juice, which was protected against fermentation by the addition of iodoacetate, had a considerable sparing action on the ascorbic acid.

Stability of Ascorbic Acid in Acerola Juice. The acerola, also known as the West Indian or Barbados cherry, is generally acknowledged to be the richest edible fruit source of ascorbic acid, approximately 2000 mg. per 100 gm. Unsweetened acerola juice was used to fortify three tropical fruit juices—pineapple, passion fruit, and guava—which were then frozen or bottled. After eight months' storage, all frozen juices retained similar proportions of ascorbic acid, 82 to 92 per cent. All bottled juices retained consistently less ascorbic acid, approximately 60 to 70 per cent. Acerola juice had little or no effect on the color or flavor of the fortified juices. Sugar appeared to have some stabilizing effect on the color of frozen acerola juice.

South Pacific Foods. As part of the South Pacific Commission's nutritional and subsistence economy program, a laboratory was established in 1954 in West Caledonia to deter-

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mine the proximate composition of local foods being used by the Pacific peoples. Work was extended to determine certain vitamin analyses, and a start was made on the amino acid content of foods, but the laboratory was closed in 1956 because of lack of funds. Results are presented for the proximate composition of sixty-two foods, for the vitamin content of thirty-eight foods, and the amino acid composition of two staple foods (taro and yam) used in the South Pacific.

Taste Interrelationships. The taste interrelationships of sub-threshold, threshold, and supra-threshold concentrations of sucrose, citric acid, sodium chloride, and caffeine in aqueous solutions were determined by ten highly trained tasters. In general, all compounds depressed the intensity of each other. The most pronounced effect was the reduction of the sweetness of sucrose by citric acid and the reduction of the sourness of citric acid by sucrose.

FOOD TECHNOLOGY

Vol. 14, April, 1960

Time-temperature tolerance of frozen foods. XXI. Frozen peas. M. M. Boggs, W. C. Dietrich, M. Nutting, R. L. Olson, F. E. Lindquist, G. S. Bohart, H. J. Neumann, and H. J. Morris.—p. 181.

*A method for the rapid tenderization of beef carcasses. G. D. Wilson, P. D. Brown, C. Pohl, C. E. Weir, and W. R. Chesbro.—p. 186.

*The effect of ripening on the thiamine, riboflavin, and niacin content of beef from grain-finished and grass-finished steers. B. Meyer, J. Thomas, and R. Buckley.—p. 190.

*The effect of degree of doneness on the tenderness and juiciness of beef cooked in the oven and in deep fat. R. Y. Visser, D. L. Harrison, G. E. Goertz, M. Bunyan, M. M. Skelton, and D. L. Mackintosh.—p. 193.

Rapid Tenderization of Beef. Five beef carcasses were used to determine the desirability of aging meat in the wholesale cut at elevated temperatures to increase tenderness. Two or 3 hr. prior to slaughter, 5 to 10 gm. oxytetracyline were given intraperitoneally or intramuscularly in 50 to 100 ml. of solution. One hindquarter and one rib cut of each carcass were aged for 24 hr. at 110°F., and the corresponding cuts from the remaining side were aged for two weeks at 35°F. The high-temperature aging resulted in a significant increase in tenderness in steaks removed from the short loin *(longissimus dorsi)*. Taste panel results showed a slightly greater tenderization effect of the 35°F. aging procedure. Slight flavor changes were noted in some of the steaks from sides aged at 110°F. The data show that significant tenderization can be achieved in beef by holding the carcasses at 110°F. for 24 hr. after slaughter.

Effect of Ripening on B Vitamins in Beef. Thiamine, riboflavin, and niacin in the *longissimus dorsi* and *semimembranosus* muscles of grain-finished and grass-finished beef from genetically similar steers was determined on the day of slaughter, and after seven, twenty-one, and forty-two days of ripening. No significant differences in the raw tissue content of these three vitamins were associated with the two feeding regimens. There was a slight, but highly significant increase ($P=0.001$) in thiamine content after twenty-one days' aging. Aging up to forty-two days had no significant effect on riboflavin. Niacin content decreased about 25 to 30 per cent between the day of slaughter and the seventh day of aging. Further significant losses of niacin were found by the twenty-first and forty-second days of ripening. The *semimembranosus* muscle contained significantly more thiamine and riboflavin than the *longissimus dorsi* muscle. However, the niacin content of these two muscles was not significantly different.

Tenderness of Cooked Beef. Three experiments were conducted in which tender and less tender beef muscles from paired U. S. Good long hindquarters were cooked to rare, medium-, and well-done by oven roasting, cooking in deep fat at 110° and 100°C. Rate of heat penetration was slower in oven roasts than in roasts cooked in fat. In general, as the internal temperature of the meat increased, the average cooking time and cooking losses increased significantly. For a given muscle, shear values and tenderness scores were approximately the same regardless of internal temperature. Average tenderness scores for roasts cooked in fat at 100°C. were slightly lower than scores for oven roasts or those cooked in deep fat at 110°C.

JOURNAL OF AGRICULTURAL AND FOOD CHEMISTRY

Vol. 8, March-April, 1960

Sodium ion, potassium ion, and weight changes in fish held in refrigerated sea water and other solutions. R. A. MacLeod, R. E. E. Jones, and J. R. McBride.—p. 132.

*Analysis of the volatile constituents of coffee. J. W. Rhoades.—p. 136.

Coffee Volatiles. Studies on the roasting of seven varieties of coffee show that generally the concentration of volatile components in the bean increased with increased roasting. Hydrogen sulphide, methyl formate, and acetyl propionyl reached a maximum concentration within the normal roasting temperatures. The concentration of dimethyl sulphide remained essentially constant during the roasting process. Analysis of green beans showed differences which may be useful in typing or grading green coffee. In roasted coffee, the ratio of diacetyl to acetyl propionyl may be indicative of the degree of roast. Analysis of brewed coffee showed the concentration of volatile components to be in the range of 1 to 2000 parts per billion.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

Vol. 172, March 12, 1960

*Linoleic acid content of fats and oils. Editorials. H. Pollack.—p. 1164.

*Food and indigestion. Foreign Letters–United Kingdom.—p. 1194.

Vol. 172, March 19, 1960

*Report of a case of botulinus poisoning. H. P. Sutherland.—p. 1266.

*Ketosis and obesity. Foreign letters–United Kingdom.—p. 1318.

*Cranberries, turnips, and goiter. Correspondence.—p. 1319.

Vol. 172, March 26, 1960

*Long-term management of obesity in a union health center. D. Berkowitz and N. Beck.—p. 1381.

*Palatable vegetable-oil milk. Clinical Notes. T. W. Houk.—p. 1387.

*Potassium deficiency and operation. Foreign Letters–India.—p. 1415.

*Serum fatty acids and heart attacks. Foreign Letters–United Kingdom.—p. 1419.

Linoleic Acid in Fats and Oils. The most effective results to date in lowering cholesterol concentration in the blood have been achieved by increasing intake of polyunsaturated fatty acids, particularly linoleic acid. But this regimen is effective only if the polyunsaturated fatty acids are responsible for an appreciable percentage of the total fat calories. They must replace rather than supplement some of the saturated fats and oils already in the diet. Contrary to statements sometimes made, not all animal fats are low in polyunsaturated fatty acids, nor are all vegetable oils high in this quality. Chicken and fish are excellent sources of linoleic acid, and pork products contain about 10 per cent. Claims for various hydrogenerated vegetable oils must be assessed with the knowledge that the hydrogenation process converts polyunsaturated fatty acids into mono-unsaturated fatty acids or completely saturated compounds. The "iodine" number of a fat or oil is not a reliable indicator of therapeutic value because it measures mono-unsaturated (as oleic) and polyunsaturated (as linoleic) fatty-acid content at the same time. Cottonseed oil has an iodine number of 110 and corn oil a number of 127, yet each has about the same amount of linoleic acid. It is now generally believed that dietary cholesterol, within the limits of the average mixed diet, plays little part in raising the blood cholesterol. Dr. Pollack does not recommend total exclusion of certain animal products from the diet to achieve a low cholesterol intake. In fact, many cholesterol-containing foods are important sources of valuable protective nutrients.

Food and Indigestion. The diet of seventy patients with nonulcerous dyspepsia who attributed their dyspeptic symptoms to certain specific foods was studied. Investigation was carried out with an "indigestible" food and a "digestible" food as the control. It was concluded that the composition of the food did not play an important part in causing the dyspeptic symptoms of these patients.

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Botulinus Poisoning. In this article, a report of a case of botulinus poisoning is described in a forty-one-year-old woman admitted to the hospital 28 hr. after eating beets contaminated with botulism toxin. The beets had been processed by the open-kettle method. The patient's husband, daughter, and father-in-law died from the poisoning. The patient recovered. Therapy consisted of 350,000 units of botulism polyvalent antitoxin, eight days in the Drinker respirator, antibiotics, and supportive measures.

Ketosis and Obesity. The mechanisms underlying the resistance of fat people to ketosis was investigated. It was found that this resistance does not depend on a higher rate of utilization or excretion of ketone bodies by the obese. The obese had a slower rise of blood ketone levels and their urinary excretion was lower than that of the nonobese. In the latter, the development of ketonuria and ketosis was preceded by a fall in the fasting blood sugar level, whereas in the obese, there was no such fall or it was minimal. These authors believe that the obese may be able to turn fat into carbohydrate at a higher rate than the nonobese. This would explain their resistance to ketosis.

Cranberries, Turnips, and Goiter. It is misleading to refer to an antithyroid compound, such as aminotriazole (the weed killer which caused such havoc in the cranberry industry last fall) as a carcinogen because this term brings to mind locally acting, chronic irritants, such as coal tar. The so-called carcinogenic action of aminotriazole and related compounds in rats results entirely from the antithyroid effect. Synthesis of thyroid hormone is inhibited, profound hypothyroidism is induced, and thereby excessive secretion of thyrotropin which, if continued long enough, causes nodular goiter. These hyperplastic, friable, and vascular glands have sometimes been found associated with nodules of hyperplastic thyroid tissue in the lung. The implication of metastasis is the reason for suggesting that they are cancers. It has also been shown that other antithyroid drugs, widely used in the treatment of hyperthyroidism for many years, have not induced carcinoma. It seems inconceivable that an antithyroid compound, no matter how potent and however prevalent in food, could ever lead to the development in man of the sort of thyroid nodules elicited in rats. In 1949, it was shown that certain vegetables of the mustard family, notably the rutabaga or yellow turnips and the seeds of others, yield on extraction an antithyroid compound accounting for the goitrogenicity of these foods. Yet no case of simple goiter in man was found from excessive eating of these vegetables. Before the cranberry episode, aminotriazole was being investigated for use in treating of hyperthyroidism. Although banned from use in killing weeds, it may prove an effective remedy suitable for human use.

Long-Term Management of Obesity. The results of treatment of 100 obese patients (7 men and 93 women) in a union health center were analyzed after a one-year follow-up. Each was overweight by at least 20 per cent of his calculated ideal weight. The general plan of management included education, caloric restriction, anorectics, exercise, and psychotherapy. Twenty-six patients discontinued the program, although they had lost some weight. Twelve were discharged because they failed to follow the program. Of the 62 continuing to the end of the year, 42 had lost 20 lb. or more, and 20 had not. Six attained normal weight levels. The three factors that appeared to be important reasons for failure were: lack of motivation, lack of intelligence, and a severe emotional overlay.

Palatable Vegetable-Oil Milk. Because of the widespread use of diets in which vegetable oil has been substituted for animal fat, the following recipe for a palatable vegetable-oil milk was devised. Five and a half cups cold water, 2 cups nonfat dry milk, 2⅓ oz. vegetable oil (corn, peanut, or cottonseed), and between 4 and 13 drops butter flavor will make 1½ qt. "milk." A blender is used in mixing. This preparation contains about 23 calories per ounce. A palatable 20 per cent cream-like material for use in coffee can be prepared by blending 1 cup cold water, ⅓ cup nonfat dry milk, 2 oz. vegetable oil, and 4 to 12 drops butter flavor.

Potassium Deficiency and Surgery. In fifty patients, the extent of the postoperative potassium deficiency was directly proportionate to the severity of tissue damage and of the operation. The more severe the tissue damage, the greater was the adrenocortical response with conservation of sodium and excretion of potassium. Dehydration was a major factor in causing potassium loss. This loss was increased further by infusion of saline solution and by gastric aspiration. Giving dextrose intravenously caused potassium loss through diuresis. Patients improved rapidly when oral feeding was started within four to six days.

Serum Fatty Acids and Heart Attacks. Many fatal heart attacks, while demonstrably due to ischemic heart disease, present no recent lesions in the myocardium or arteries to account for the sudden attack. In investigating the nature of these attacks, the serum fatty acid levels were determined. The mean serum fatty acid level in fifty cases was 14.7 mEq per liter, whereas that of fifty-seven controls of similar age was 9.9 mEq. This suggests that high levels of serum fatty acids may be a factor in causing this condition.

THE JOURNAL OF THE CANADIAN DIETETIC ASSOCIATION

Vol. 22, March, 1960

Dietetics in Canada.—p. 46.

*Let's talk about specialized food services. E. L. Brittain.—p. 50.

*Variation in riboflavin excretion. A. B. Morrison, C. E. Cox, and J. A. Campbell.—p. 58.

Specialized Food Services. In this article, a dining services superintendent states that to be a success in the food industry the first and fundamental requirement is good food properly cooked and served attractively. To attain this, the operator must: (a) know good food and how to produce it, (b) be able to inspire his staff to produce good quality, and (c) merchandise. She discusses some of the features of the specialized food service—food service for employees—in which she is engaged. In conclusion, some of the principles used to improve an often poorly prepared food—vegetables—are presented.

Variation in Riboflavin Excretion. The variation in excretion of riboflavin per 2-hr. period or per milliliter of urine was studied in eight normal male subjects. The variation in excretion per 2 hr. was less than that for excretion per milliliter of urine. Six-hr. samples showed much less variation from day to day than did 2- or 4-hr. samples, and provided a fair estimate of the total 24-hr. excretion. Samples collected during the overnight fasting period showed somewhat less variation between subjects than those collected during the daytime. It was concluded that in nutritional surveys, urine samples should be collected for the longest convenient period, preferably during the overnight fast.

THE JOURNAL OF NUTRITION

Vol. 70, March, 1960

*Nutritional studies with the guinea pig. VI. Tryptophan (with ample dietary niacin). M. E. Reid and L. von Sallmann.—p. 329.

*The availability of lysine in wheat, flour, bread and gluten. W. K. Calhoun, F. N. Hepburn, and W. B. Bradley.—p. 337.

*Experimental obesity and weight reduction on young female rats: development of procedures and calcium and phosphorus balance studies. C. M. Young, E. L. Empey, D. Turk, and V. U. Serraon.—p. 353.

*Efficacy of the FAO amino acid reference standard for growth of the weanling rat. E. E. Howe, E. W. Gilfillan, and J. B. Allison.—p. 385.

*Stepwise weight reduction in obese, young women: clinical and metabolic responses. C. M. Young, A. M. Brown, B. A. Gehring, and B. M. Morris.—p. 391.

*Acceleration of essential fatty acid deficiency by dietary cholesterol. R. T. Holman and J. J. Peifer.—p. 411.

Tryptophan Study with Guinea Pigs. The requirement of the guinea pig for tryptophan was studied, using a diet containing protein and which was adequate in all essential amino acids other than tryptophan. The most outstanding finding in these studies is that the requirement for tryptophan by one specific organ, the eye, is greater than that for maximum growth. This is probably the first observation of a higher amino acid requirement of a specific organ in comparison with the body as a whole.

Availability of Lysine. The avail-

ability of lysine in wheat, flour, bread, and gluten was determined by rat-growth studies. Two basal diets, one containing 20 per cent wheat gluten and the other containing an amino acid mixture without lysine patterned after this amount of gluten—were compared. By the method used, the availability of lysine in wheat, flour, and bread was 75, 72, and 76 per cent respectively, with the gluten basal diet. With the amino acid basal diet, 78, 80, 83, and 80 per cent availabilities were found, respectively, for wheat, flour, bread and gluten.

Experimental Obesity and Reducing. This study is concerned with the calcium and phosphorus metabolism of obese rats before, during, and after weight reduction, by means of balance studies and bone density studies. In general, during the pre-obesity and obesity periods, the majority of the animals retained calcium. In the early phase of the reducing period, in the majority of the animals, calcium retention or equilibrium tended to shift into equilibrium or deficit. In the post-reducing maintenance phase, calcium retention again improved. No adequate explanation could be offered for the negative calcium balances. Phosphorus retention was noted in practically all of the animals until the reducing phase, at which time retention decreased. By late reduction, over 80 per cent of the animals were in phosphorus deficit; none were retaining phosphorus. In the post-reducing period, all returned to a state of phosphorus retention. There were no differences in the bone densities of the control and experimental rats.

FAO Amino Acid Standard. In rat-growth experiments, the FAO (Food and Agriculture Organization of the United Nations) amino acid reference pattern was found to possess a somewhat greater efficiency than an amino acid mixture patterned after casein at a high essential amino acid content. At a lower essential amino acid content, the protein efficiencies were equal but the FAO pattern supported much more rapid growth when the diets were fed *ad lib.* Decreasing the tryptophan content of the FAO pattern by 33 to 50 per cent or increasing the lysine content by 22 per cent did not alter the nutritive value of the mixture. A mixture containing casein supplemented to the FAO reference pattern with essential amino acids was nutritionally equivalent to the FAO reference amino acid mixture itself.

Metabolism in Stepwise Reducing. The effect of stepwise weight reduction on the nitrogen, calcium, and phosphorus metabolism of five obese young women was studied by the balance technique. The mean loss over a sixteen-week period was 17.1 lb. The caloric requirement for weight maintenance decreased markedly in subjects whose caloric intake was restricted for six weeks. With caloric restriction, some subjects lost nitrogen and, to a lesser extent, phosphorus. By the eighth week, all showed calcium deficits. There appeared to be no physiologic advantage for the stepwise reducing regimen over straight reducing as measured by elimination of nutrient deficits. From a psychologic standpoint, four of the five subjects preferred stepwise reduction.

Accelerating Essential Fatty Acid Deficiency. This report describes several experiments in which essential fatty acid (EFA) deficiency has been accelerated. The inclusion of 1 per cent cholesterol in a diet free of essential fatty acids accelerated the appearance of dermal signs of EFA deficiency in rats. That dietary cholesterol accentuates EFA deficiency is indicated by a lowered food efficiency, lower weight gain, retardation of testicular development, and an accentuated polyunsaturated fatty acid pattern of heart lipids.

JOURNAL OF PEDIATRICS

Vol. 56, March, 1960

*Observations on the prophylactic use of vitamin K in the newborn infant. T. J. Vietti, T. P. Murphy, J. A. James, and J. A. Pritchard.—p. 343.

*Evaluation of prepared milks for infant nutrition; use of the Latin Square technique. G. W. Brown, J. M. Tuholski, L. W. Sauer, L. D. Minsk, and I. Rosenstern.—p. 391.

Vitamin K in Newborn Infants. The need for routine administration of vitamin K to newborn infants was subjected to clinical and laboratory evaluation. During a three-month period, vitamin K was given to half of the male infants on arrival in the hospital nursery, and the incidence of secondary hemorrhage after circumcision was noted. Hemorrhage was found to be six times more frequent in babies who did not receive vitamin K. In another smaller study, only one of twenty-two babies who received vitamin K showed moderate prolongation of the prothrombin time, whereas ten babies of twenty-four who had not received vitamin K showed moderate to marked prolongation of the prothrombin times.

Prepared Milks. Four formulas were compared for their nutritional adequacy in the feeding of infants as measured by weight gains and stool characteristics. The newborn infants studied were divided into two groups; those in the "Latin Square" group were fed a different formula every two weeks for the first eight weeks of life; those in the "Single Formula" group received only one of the four formulas for the entire eight weeks. All formulas had a relatively low-protein content corresponding to that of human milk. The formulas as fed contained 20 calories per ounce. The infants consumed the formulas in recommended amounts of 45 to 55 calories per pound per day; no solid food was offered. All formulas contained cow's milk protein with lactose as the carbohydrate, but the composition of fats varied in the four milks. Variations in weight gains were statistically significant only in relation to the age period; the gains in the first

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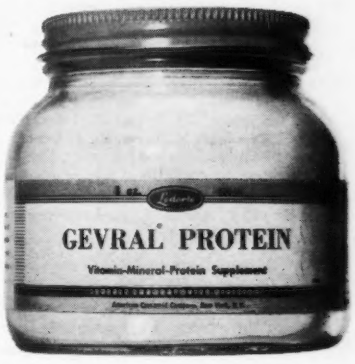

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Folic Acid	0.5 mg.
Vitamin B_{12} with AUTRINIC® Intrinsic Factor Concentrate	1/15 U.S.P. Oral Unit
Lysine	1.5 Gm.
Choline Dihydrogen Citrate	50 mg.
Inositol	25 mg.
Ascorbic Acid (C)	25 mg.
Rutin	12.5 mg.
Vitamin E (tocopheryl acetates)	5 I.U.
Calcium ($CaHPO_4$ & Calcium Caseinate)	414 mg.
Phosphorus ($CaHPO_4$)	60.9 mg.
Calcium Caseinate	21 Gm.
Ferrous Fumarate	15 mg.
Iron (as Fumarate)	5 mg.
Fluorine (CaF_2)	0.05 mg.
Copper (CuO)	0.5 mg.
Iodine (KI)	0.1 mg.
Potassium (from K_2SO_4 and Calcium Caseinate)	15 mg.
Manganese (MnO_2)	0.5 mg.
Zinc (ZnO)	0.25 mg.
Magnesium (MgO)	0.5 mg.
Boron ($Na_2B_4O_7.10H_2O$)	0.05 mg.
Carbohydrate (from malt extract and sucrose)	7 Gm.
Calories	105.3
Total Protein (Nx6.38)*	60%
Sodium	.075%
Fat not more than	2%

SUPPLIED: ½ lb. jar and 5 lb. can
*AS CALCIUM CASEINATE OF MILK ORIGIN

period were smaller than in the subsequent periods. No differences in weight gains could be associated with the four different formulas. Analyses of number of stools per day indicate that the frequency of stools tends to diminish as the infant grows older. No significant differences were observed in infants fed a different formula every two weeks for eight weeks in contrast to those fed the same formula for a like period of time.

THE LANCET

No. 7117, January 23, 1960

*Effect of corticosteroids and gluten-free diet on absorption of iron in idiopathic steatorrhea and coeliac disease. J. Badenoch and S. Callender.—p. 192.

*Effect on serum-cholesterol level of replacement of dietary milk fat by soybean oil. O. Turpeinen, P. Roine, M. Pekkarinen, M. J. Karvonen, Y. Rautanen, J. Runeberg, and P. Alivirta.—p. 196.

No. 7121, February 20, 1960

*Vitamin-A deficiency following total gastrectomy. J. F. Adams, J. M. Johnstone, and R. D. Hunter.—p. 415.

Iron Absorption in Steatorrhea and Celiac Disease. Studies with radioactive iron have shown gross malabsorption of iron in patients with idiopathic steatorrhea and celiac disease. The absorption may be rapidly improved by administering cortisone, prednisone, or corticotrophin, but it decreases equally rapidly when the drugs are stopped. In control subjects, steroids have no such constant effects. In celiac disease, a gluten-free diet improves iron absorption.

Reducing Saturated Fats in a Hospital Diet. The ordinary house diets of two mental hospitals near Helsinki, Finland, were changed by replacing whole milk with an emulsion of soybean oil in skim milk and by replacing butter and margarine with a special margarine containing considerably more unsaturated fatty acids than the ordinary margarines marketed in Finland. These changes decreased the saturated fatty acid content of the diet and increased its content of linoleic and other polyethenoid acids. After this dietary change, mean serum cholesterol of the thirty-five- to sixty-four-year-old male patients decreased from 236 to 215 mg. per 100 ml. serum. The decrease was highly significant.

Vitamin A Deficiency after Gastrectomy. Five cases of vitamin A deficiency in patients who had undergone total gastrectomy are reported. Four patients were night blind, and the fifth had follicular hyperkeratosis. These abnormalities were corrected in the four cases given oral vitamin A. The deficiency is of complex origin and steatorrhea is not the only causal factor. Vitamin A should be administered prophylactically to patients who have undergone gastrectomy.

NUTRITION ABSTRACTS & REVIEWS

Vol. 30, January, 1960

*Lipid metabolism in herbivorous animals. G. A. Garton.—p. 1.

Lipid Metabolism in Herbivorous Animals. In this article, the lipid metabolism of domesticated herbivorous animals of economic importance and, particularly the ruminants, is discussed. Ruminants and non-ruminants may eat the same pasture, yet form different depot fats. The nature of dietary lipids, their digestion and absorption, and the biochemistry of tissue lipids are included in this discussion. Special attention is devoted to the composition of milk lipids and to the origin of milk glycerides.

NUTRITION REVIEWS

Vol. 18, April, 1960

*Salt, fat and hypertension: the Japanese experience. L. K. Dahl.—p. 97.

*Syndromes of magnesium depletion and retention in man. Part II.—p. 101.

Iron fortification of milk.—p. 105.

A study of nail growth.—p. 112.

Nutritive value of frying oils.—p. 119.

Salt, Fat, and Hypertension. An opportunity was made available to study the adult population of a Japanese farm village in 1958. It was discovered that the clinical picture of hypertension was significantly different from that commonly observed in the U.S. These Japanese had strikingly little evidence of the usual cardiac complications found so commonly in western adult populations. There is little doubt that in our society, hypertension accelerates the progress of established atherosclerosis, and it seems likely that the onset of atherosclerosis is materially hastened by the presence of hypertension. From the American viewpoint, the Japanese diet might be most simply described as a primarily vegetarian, low-fat (largely unsaturated), average-protein, high-carbohydrate, high-salt diet. The daily fat intake of about 20 to 30 gm. is derived almost exclusively from vegetables and fish. Protein intakes are about 70 gm. per day, of which only a quarter comes from animal sources, mostly fish and shellfish. Calories are derived mainly from cereals, particularly rice. Salt intake is generally high, and the areas in which salt consumption is greatest appear to coincide with those areas where the prevalence of hypertension and cerebrovascular accidents is greatest. If high-fat and high-salt intakes are important etiologic factors in the development of atherosclerosis and hypertension, respectively, it could be predicted that the Japanese would be afflicted primarily with hypertension rather than atherosclerosis. This seems to be true.

Syndromes of Magnesium Depletion. A syndrome of magnesium deficiency can probably be defined in certain patients with alcoholism or electrolyte imbalance. The papers in this review have helped considerably to define this syndrome in man, which should soon qualify for inclusion in textbooks. It seems fair to conclude that onset of psychosis or semicoma plus signs of tetany, especially in circumstances with starvation and fluid and electrolyte loss, should suggest the possibility of magnesium deficiency.

PROCEEDINGS OF THE NUTRITION SOCIETY

Vol. 19, No. 1, 1960

*Maternal nutrition in relation to abnormal fetal development. J. W. Millen and D. H. M. Woollam.—p. 1.

*Body stores in human pregnancy and lactation. A. M. Thomson and F. E. Hytten.—p. 5.

*Anatomy and physiology of the eye from the point of view of its nutrition. H. Davson.—p. 69.

Personal observations on some metabolic diseases of the eye. F. C. Rodger.—p. 80.

Malnutrition and eye disease in Tanganyika. D. S. McLaren.—p. 89.

Malnutritional keratitis. C. J. Blumenthal.—p. 92.

Protein and myopia. P. A. Gardiner.—p. 96.

Vitamin B_{12} and the eye. J. M. Heaton.—p. 100.

Nutrition and Reproduction. The relationship between maternal nutrition and abnormal fetal development is reviewed briefly. There are two outstanding points. The first is the need for further investigation of maternal nutrition during pregnancy, with particular emphasis on the possible importance of minor degrees of vitamin deficiency in the first three months of pregnancy. The second is the value of the teratogenic experiment as a test-tube in which the interaction of vitamins and hormones may be studied. It is of interest to note that vitamin A is, up to the present, the only vitamin of which an excess has been shown to have a teratogenic effect in pregnant animals.

Body Stores in Pregnancy and Lactation. It is generally believed that metabolism during pregnancy is strongly anabolic, storage tending to exceed the amount attributable to the growth of the product of conception and the enlargement of the organs of reproduction. The surplus is usually interpreted as a reserve for lactation, in which the trend is believed to be catabolic. The great variation of the gain in body weight in human pregnancy suggests that there must be many exceptions. Since the fetus will grow at the expense of the maternal tissues, if necessary, the needs of the fetus place a limit on maternal storage, if the diet is inadequate for both. Little or nothing is known about the nature of the material stored or the sites of storage. If body stores are used during lactation, the mother must lose weight, but the few studies of metabolism during lactation show weight gains as well as losses. There seems to be no correlation between weight gain during pregnancy and the yield and composition of breast milk. Milk production can, if necessary, proceed at the expense of the ordinary maternal tissue.

Nutrition and the Eye. This article gives in detail the anatomy and physiology of the eye from the point of view of its nutrition. Included in this discussion is the importance of nutrition of the lens. It is not surprising that dietary deficiencies may cause changes in the lens. Alterations in the lens, whether they be the effects of age, of

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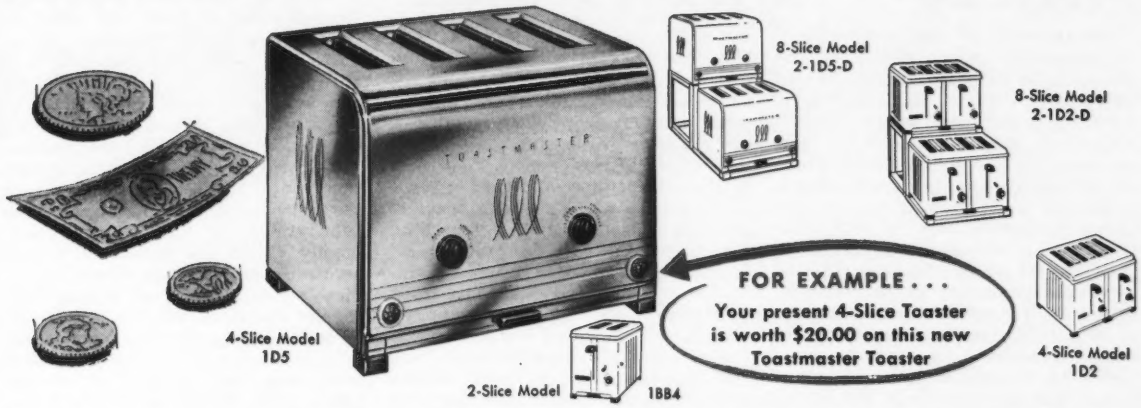
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300 to 1200 slices of perfect golden-brown toast an hour! No levers to press. Reliable electric motors lower the bread and serve it up when toasted. Exclusive Superflex Timer makes each slice uniform in color and flavor!

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trauma, of poisons, of radiation, or of diet are manifest usually in a cataract, or loss of transparency. The nutrition of the lens and cornea is achieved by the circulation of aqueous humour which carries oxygen, sugar, and amino acids to them and carries away excess carbon dioxide and lactate.

SCIENCE

Vol. 131, March 4, 1960

*Strontium-90 content of the stratosphere. H. W. Feely.—p. 645.

Strontium-90 of the Stratosphere. A calculation may be made of the strontium-90 concentrations in human bones to be expected in the future if the testing of nuclear weapons in the atmosphere is not resumed. It has been estimated that a concentration of about 2.2 micromicrocuries per gram calcium existed in newly formed bone in the North Temperate Zone in July 1958. It is assumed that the dietary levels of strontium-90 are directly proportionate to the total quantity of strontium-90 in soil. As a result of the Soviet tests in late 1958, the total stratospheric burden reached more than 2 megacuries by November 1958. It is assumed that all debris from the Soviet tests will be deposited in the Northern Hemisphere and that the residence half-time is six months for Soviet debris and twelve months for U.S.–British debris. The concentration of strontium-90 in newly formed bone will continue to rise for one or two years, passing a maximum of almost 4 micromicrocuries per gram calcium during 1961. Then, concentrations should decrease at a rate close to the twenty-eight-year half-life of strontium-90. If the dietary levels of strontium-90 are more dependent on the rate of fallout than on the cumulative surface burden, maximum concentrations in newly formed bone should have been reached in 1959, and concentrations should decrease fairly rapidly during the next few years. No great increase in skeletal burden is to be expected as a result of future stratospheric fallout from the bomb tests conducted through the end of 1958.

UNITED STATES ARMED FORCES MEDICAL JOURNAL

Vol. 11, April, 1960

*Nutritional aspects of the All-Purpose Survival Ration. A critical appraisal. D. H. Calloway.—p. 403.

All-Purpose Survival Ration. Recent research bearing on the need for and composition of a universal survival ration is reviewed. It is concluded that a minimal supply of food is required under survival conditions to aid morale and to help the sequelae of starvation —ketosis, dehydration, and reduced work efficiency. To assure that the food will not impair water economy, the following composition is recommended: (a) a maximum of 7 to 8 per cent of total calories as protein; (b) a minimum of 75 to 100 gm. carbohydrate, and (c) approximately 4.5 gm. sodium chloride. The components of a prototype All-Purpose Survival Ration (1959) are described.

AMERICAN RESTAURANT

Vol. 44, March 15, 1960

*Time costs money.—p. 29.

*The $1.09 steak. G. L. Wenzel.—p. 50.

*Guard keys to storeroom like keys to vault. T. Greer.—p. 56.

Vol. 44, April 1, 1960

*Labor relations . . . preparing for arbitration. W. J. MacReynolds.—p. 20.

*Needs for storage space change.—p. 36.

*Never boil a boiled dinner. C. E. Blackburne. —p. 44.

Time-Saving Equipment. Cutting labor costs by using new and better equipment in restaurant kitchens is a matter worth considering. The first section of this special report gives a check list by which one can evaluate present kitchen facilities. A second article presents the advantages of using various modern machines. Included are the food slicer, the food cutter, food mixers, equipment on wheels, the infra-red broiler, combination units for steaming and deep-fat frying, steam-jacketed kettles with mixers, refrigerators that can be converted to freezers, steam cleaning devices, and portable cleaners. Food shaping machines for making hamburger patties, mock chicken legs, fish cakes, crab cakes, and other shaped foods are money savers, too. In one large food service unit, the automatic shaping machine, operated by one cook, accomplished in 45 min. what formerly required a total of 8½ hr. on the part of four cooks. Another popular piece of equipment is that used for better bar control. It meters and accurately measures every drink, accounting for every drop of liquor in each bottle that is locked into place. By eliminating losses from spillage, leakage, evaporation, and over-pouring, it assures from four to ten more drinks per bottle. The final type of machinery described is the multiple total cash register. The experience of one restaurant with this type of register is presented. Errors were eliminated, waitresses were able to give efficient service to four or five more guests, and morale was greatly improved.

The $1.09 Steak. All over the country, $1.09 steak houses are springing up. If a meal featuring this type of steak (a ½-in. t-bone from veal loin, weighing 8 to 11 oz. per steak) is to be high-quality, the meat must be handled properly. Directions are given for preparing the steak, using meat tenderizer and seasoning salt. Hints on broiling are included. Pricing above $1.09 is also discussed.

Guarding the Storeroom. This is the fifth in a series on inventory and storage. The accounting department should have control of the storeroom, and food should be issued only on proper requisitions signed by the person drawing the food. Only the authorized person on duty should be allowed to enter the storeroom. It is suggested that requisitions be made out the day before they are to be filled, so that this department may operate efficiently. Making a suggestion list for each department, based on the menu and previous requisitions, is also helpful. Hints are given for making inventory as simple as possible, and several forms are illustrated (purchase record for canned food, dairy products receiving record, and a form for silverware, china, glassware, cooking utensils, and cutlery).

Preparing for Arbitration. Procedures are outlined which will prepare management's representative for whatever may arise at any stage of the arbitration process. They include the following: (a) Read the contract (read carefully, several times, the section containing the agreement with the union concerning taking cases to arbitration). (b) Study the case thoroughly (read the grievance report, scrutinize any exhibits developed, review all such material, get answers to any questions arising as a result of such a study, *think* about the case, and determine what section of the contract may have a bearing on this case). (c) Pre-hearing conference. (The purpose is to make sure everyone has a thorough understanding of management's position in the case, to determine if all the necessary facts have been gathered to support management's position, to determine the best method of presenting the case at the hearing, and to review with management witnesses the testimony they will give. If you are in a position to guess the approach the union will use at the hearing, don't be hesitant about conveying your thoughts to the others.)

Changes in Storage Space Needs. New developments in foods and food preparation requirements are producing changes in both dry and refrigerated storage space needs. Instant and frozen potato products and instant onions have greatly reduced bulk storage needs for these items. Fabricated foods and dehydrated items are also changing the storage pattern. With the use of frozen foods increasing, more freezer and walk-in refrigerator space is required. Ways of improving storage space and methods are pictured and discussed. Advances in refrigeration and freezer equipment are pointed out, flexibility is stressed, and control of walk-in refrigerators is emphasized.

Boiled Dinners. Entrées, such as the New England boiled dinner, are losing out in the customer acceptance race because these dishes are often improperly prepared. They should be simmered, never boiled. Twelve quantity recipes for better known boiled dinners are given. Some of those included are corned beef and cabbage, spare ribs and sauerkraut, New England boiled dinner, and boiled ham and vegetable dinner.

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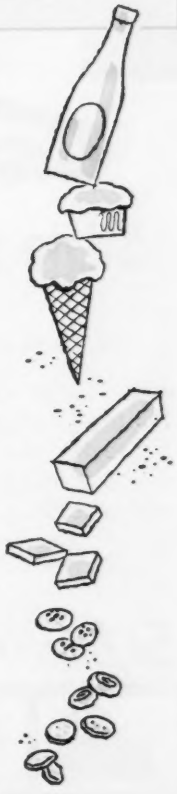

Since beta carotene Roche gives safe yellow color with vitamin A activity (inherently included), it is preferred by margarine manufacturers and other food processors. At this time, there are no forms of the product available for use by consumers. If you wish answers to your questions about this safe food color, we suggest that you write for a free copy of "The Story of Nature's Yellow — Beta Carotene." For food processors — technical information and samples gladly sent on request.

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COLLEGE AND UNIVERSITY BUSINESS

Vol. 28, April, 1960

*What's ahead in college food service? J. W. Stokes.—p. 81.

Future of College Food Service. This is the first of two articles on college food service. The fascinating history of educational agencies and the collateral development of methods of feeding faculties, students, and staffs is scanned, starting with the European universities of the twelfth century. Students at Oxford and Cambridge lived in their quarters and, with the help of servants, provided their own meals. Food served in the English "public school" a hundred years ago was deplorable, and the first secondary schools of the U.S. were patterned after the English "grammar" schools. Food service has played an important role in American colleges and universities. The school lunch movement has resulted in cafeterias in most elementary and high school plants, and the cafeteria is now accorded a major role in colleges and universities. Trends in this type of service are concerned with eliminating or reducing bottlenecks. Stands for silver, condiments, water, and glasses are being placed at service stations beyond the cashier's booth. The cashier is being placed farther from the end of the line so as to be able to scan a tray as it approaches. Then the hollow square, "shopping center" type of cafeteria has been devised to speed up selection. Prepackaged foods and self-service of beverages hasten the cafeteria line, too. Also a part of college food service are snack bars and student unions. In regard to materials and equipment, stainless steel, magnesium, aluminum, and plastics are taking on greater importance all the time.

DRIVE-IN MANAGEMENT

Vol. 19, March, 1960

*Pie crust made easy. D. E. Lundberg.—p. 24.

*What's a good hamburger?—p. 28.

Easy Pie Crust. One of the chief problems encountered in making pie crusts in the use of too much water. In the method described here, about 15 per cent less water than usual is added; the flour is so thoroughly coated with fat, that it will not soak up as much water. Mixing can be done satisfactorily by machine. Accompanying photographs show the step-by-step procedure in making the crust. Formula for the crust consists of 1 part flour, 0.6 part shortening, 0.3 part salt, and 0.25 part water.

Good Hamburgers. Use of the proper quality meat is a prime requisite in making good hamburgers. This does not mean buying the most costly beef. Top quality hamburger can be made from the chuck or round of beef, using U.S. Good or Commercial grade. Along with the red meat, the mixture should include 15 to 25 per

NOW! INSTANT TANG IN NEW INSTITUTIONAL SIZES

More vitamin C than orange juice at a cost of less than 2¢ a serving

WHEN instant TANG was first introduced, dietitians expressed great interest in this new breakfast drink. Now, General Foods is happy to announce two new, volume-serving sizes:

17½-oz. can, yielding a gallon.

5½-lb. can, yielding 5 gallons.

Ideal for breakfast trays and between-meal nourishments, instant TANG provides more vitamin C, glass for glass, than fresh, frozen or canned orange or grapefruit juice . . . more vitamin A than the finest tomato juice . . . *without seasonal variation in vitamin content* . . . has 63 calories per 4-ounce serving.

All this for less than 2¢ a 4-ounce serving. *Compare this with your cost of frozen concentrate or canned juice.*

In convenient, *instant* form, TANG can be made up fresh by the glass or gallons at a time—just mix with cold water, the colder the better.

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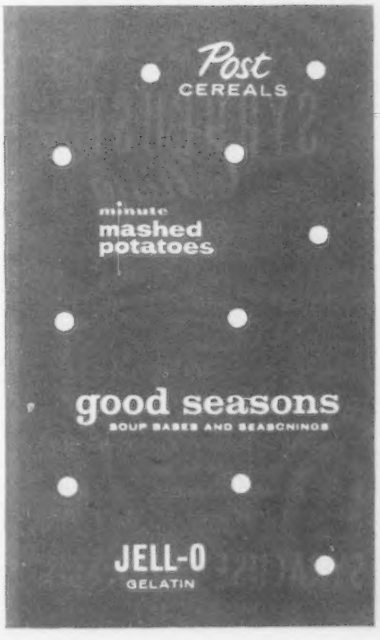

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cent fat (white and clean looking—yellow fat produces an off taste). If trimmings from any part of the carcass are used in place of some of the chuck or round, the fat percentage should be decreased to about 10 per cent. The kind of hamburger varies with the section of the country. About 75 per cent of the American public prefers a "fat" hamburger, one made with at least 25 per cent fat; the remainder prefer a leaner product. If meat is bought already ground or in patty form, the operator should specify the hamburger formula he desires; otherwise he is "wide open" for receiving anything the meat company may wish to send him. Hints for preparing the hamburgers, for using cooked fat instead of raw, for a seasoning recipe, for cooking temperature, and for dressings are also included.

FAST FOOD MAGAZINE

Vol. 59, March, 1960

*Cost-cutting supply system.—p. 55.

Saving Through Simplified Buying. One drive-in franchise organization works on the theory that the more simplified the buying cycle, the less often it is necessary to make deliveries, and the greater profits there are for the individual operator. Details of the system are outlined. It begins with a unique plan of warehousing; all buying for fifteen district warehouses is done by the parent company, resulting in savings which can be passed on to the individual franchise holders. Supply orders are placed twice a week and delivered the day following the order. No time is wasted talking to food salesmen or getting supplies. Frozen foods are used extensively to make handling easier and to reduce preparation time and labor. Each outlet has a huge combination walk-in freezer unit. Three-fourths of its capacity is low-temperature freezer storage; the remaining section, for refrigeration, can be converted to freezer storage, should additional frozen foods be added to the line in the future.

FOOD ENGINEERING

Vol. 32, March, 1960

*Fresh flavors now "enzymed in."—p. 83.

Fresh Flavor in Prepared Foods. The latest effort to keep garden-fresh taste and aroma in many canned, dehydrated and frozen foods is based on the concept that fresh flavor is produced by action of specific enzymes on natural chemical compounds called "flavor precursors." Usual processing methods inactivate substantially all of the enzymes in a food product, including many responsible for flavor. In a recently patented process, various "flavorese" enzymes have been extracted (obtained either from the fresh material before processing or from a biologically related source) and added to the processed food, reactivating the precursors to enhance natural flavor. The method has been used with dehydrated cabbage, carrots, and onions; canned peas and tomato juice; and frozen, canned and powdered orange and lemon juice. Advantages over present methods of flavor enhancement include cost savings, quality improvement, and fewer problems in meeting government additive regulations.

FOOD SERVICE MAGAZINE

Vol. 22, March, 1960

*A practical guide to food service sanitation. W. F. Snyder.—p. 42.

*Beat the breakage problem. G. Patrick.—p. 47.

*The machine that pays for itself. H. Sanstadt. p. 54.

Guide to Food Service Sanitation. An interview with Walter F. Snyder, Director of the National Sanitation Foundation, is reported. Nineteen questions are posed. Several relate to the temperature of rinse water, some to the washing of flatware, some to dishwashing and sanitizing compounds. Others are concerned with various aspects of equipment and with the employee problem. Answers are concise and constructive and should be helpful to operators.

Dish Breakage. The national average on china and glass replacement is 1 per cent of food sales. Dish breakage can be considered a dishwashing cost, and surveys show that this cost varies nationally from ¾ to 1½ cents per dish. Breakage control has been handled in a number of ways. Penalty plans seldom work. Two of the best approaches are the wall display where dish sizes and prices are shown, and the bonus plan where all employees share in a breakage saving over a standard value. This plan is illustrated. A critical evaluation of the dishwashing layout is another important step in breakage control. The dishwashing machine, racks, carts, tables, and so on also contribute to breakage reduction.

Ice Machines. There are many advantages to owning an ice machine. One is cost. An ice machine will produce ice at an average cost of 15 cents per 100 lb. compared with a national average of $1.00 per 100 lb. delivered. A good restaurant operator should plan his ice usage at the rate of 1½ lb. per customer per day. Other advantages come from owning an ice machine. One is never without ice. The machine is completely automatic, and the ice is even stored in an easy-to-handle form (no need to stoop, scrape, or use an ice pick). Even the size and shape of ice cubes have been engineered. Flaked ice is important to the fast service operator; the cost of fountain drinks can be cut 25 per cent with the use of plenty of ice and less beverage sirup. Crushed ice also adapts itself to food displays, giving a touch of showmanship. For installation of an ice machine, one needs only a routine drain, water, and electrical connections.

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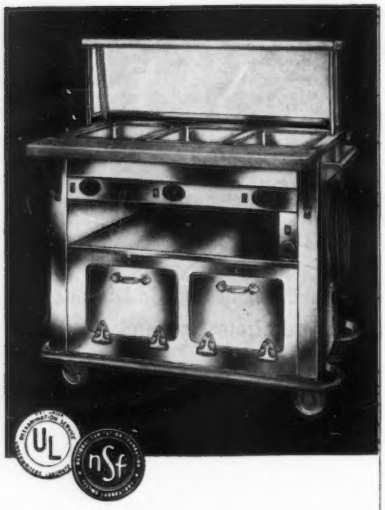

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HOSPITAL MANAGEMENT

Vol. 89, April, 1960

*What is a day's work? L. H. Kotschevar.—p. 82.

A Day's Work. There is no definite answer to the question, "What is a day's work?" Opinions vary between manager and worker and between one operation and locality and another. Perhaps a definition of a day's work may be obtained by stating what the factors are that cause an employee to put in a good day's work. Such factors are discussed in this article. Under proper working conditions, a worker should feel tired only for about one-fifth of his shift, and most of this tired feeling should occur at the end of the shift. High productivity depends on rest—momentary fractions of rest for the muscles, short breaks of 3 to 5 min. during a shift, and sufficient periods of rest between shifts (days off, vacations). Restricting movement conserves energy; this is being accomplished by developing work centers or circular workplaces —island work centers. Elimination of waste motions, a study of body movements, placement of tools, work heights, organization of storage, and organization of work are chief among the factors which result in happy employees who can work easily with maximum productivity.

HOSPITAL PROGRESS

Vol. 41, March, 1960

*Planning food facilities for hospitals. R. R. Iuen.—p. 78.

Planning Hospital Food Facilities. Scientific planning of food service facilities is imperative today, involving the administrator, the director of dietetics, and the architect. Suggestions are given to help in such planning. In regard to size of food service facilities, a chart is shown which lists in square feet the recommended areas for various departments (such as receiving, main kitchen, office, dishwashing, refrigeration, and so on.) for 100 to 450 beds. Problems of tray service, maintenance, sanitation, and equipment are considered. The value of using models and templates of food service equipment in planning layout is stressed.

HOSPITALS

Vol. 34, March 16, 1960

*Good hot food is not enough. J. W. Bloch.—p. 99.

Vol. 34, April 1, 1960

*How mobile equipment can simplify tray service. R. L. Kaczmarek.—p. 67.

Good Hot Food Not Enough. Patient satisfaction with food service at the Greenwich (Connecticut) Hospital was described in previous issues of *Hospitals*. The same subject, as it is considered at Montefiore Hospital, New York City, is discussed here. At the Greenwich Hospital, all dietary services are coordinated under the chief dietitian. At Montefiore, the dietary department is divided into two areas of operation—one involving the medical aspects (or therapeutic areas) of food service; the other involving the non-medical and administrative aspects. The great scope of food administration in a large modern hospital, the need for long training and experience are basic facts which result in the need for both a professionally qualified dietitian and a commercially trained food administrator, in the opinion of the author. There are a number of ways in which these two individuals can work together to improve patient service—going beyond the point of serving good hot food. One is to conduct research on making modified diets more acceptable —seasoning foods, using garnishes, presenting puréed fruits and vegetables in enhancing ways. Other areas to work on are setting up attractive trays and improving the training, manner, and appearance of the persons serving the trays.

Mobile Equipment for Hospital Food Service. Mobile equipment is used exclusively at St. Francis Hospital, Milwaukee, for its patient food service. Advantages of this type of equipment are: (a) It may be moved at any time to find the most desirable arrangement in terms of type of food service, labor expenditure, speed of service, and space. (b) Movable carts simplify transfer of foods from preparation area to serving stations. (c) These carts permit faster and more efficient cleaning. (d) Extra electrical outlets on both sides of the carts make it more convenient for plugging them into either side of the tray assembly line and connecting the dish dispensers (resulting in more space directly around the tray assembly area). (e) They can be used in a number of ways —for instance, special diet carts used also for serving salads and desserts. (f) Equipment, such as dish dispensers on wheels, can help reduce dish breakage and storage space. Since this assembly system has been in operation, personnel has been reduced, tray service time has been shortened to half an hour for 200 trays, and food palatability has been increased.

INPLANT FOOD MANAGEMENT

Vol. 7, March, 1960

*Meat: a special *Inplant* roundtable.—p. 34.

Roundtable Discussion on Meat. A panel of five men with special knowledge of meat and its use participated in a discussion of the practical aspects of meat in the American diet and its specific use in employee food service. Two problems kept popping up during the 3-hr. session—communication and human relations. Further discussion was broken down into eleven "challenges" which involved consumer mores and restaurant economics. A tapescript of the meeting was edited and is presented here.

INSTITUTIONS

Vol. 46, April, 1960

*Sanitation for food service workers. T. M. Richardson.—p. 22.

WHY IS FLOUR BLEACHED?

Intelligently curious people sometimes ask why flour is bleached. The simple answer is, of course—most people prefer white bread. But there's another technical reason:

Flour is "treated" rather than "bleached," to improve baking quality. The word, "bleach," is a misnomer. The fact that in the process flour becomes somewhat whiter is incidental.

Flour must be stored in a warehouse and occasionally turned to increase surface exposure to air . . . or treated during the milling process. Whether "bleached" or "aged"—nutritive value is the same. The real purpose is to condition the gluten.

Gluten is a protein peculiar to wheat—a combination of amino acids, gliadin and glutenin, which combine in the presence of water as gluten. During kneading and baking, gluten forms the cellular mesh that captures air or carbon dioxide gas produced by yeast or a leavener—to make bread, biscuits and other baked foods so deliciously light. Freshly-ground flour doesn't bake as well as aged or treated flour—because the gliadin and glutenin "work" better as gluten when oxidized—either by oxygen from the air or from harmless bleach approved for use by the Federal Food and Drug Administration. To rely on storage and time adds considerably to cost.

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PAPER
the personal food service

*Airline food service in the jet age. Part VI. S. M. Hartt.—p. 67.
*What floor, please?—p. 122.

Sanitation for Food Service Workers. The first question dealt with in this monthly question-and-answer column concerns the training of hospital employees. There are many modern developments in products encompassing cleaners, sanitizers, tools, equipment, packaging, and so on, which are designed to help maintain sanitary standards, make labor easier, tableware more beautiful, floors more readily freed from germ-infested dust and grime, storage facilities safer, and food products of a higher quality. However, none of these developments was intended to replace day-to-day adherence to the simple tenets of sanitation, i.e., thorough cleaning procedures, attention to temperature requirements, observance of rules for preventing the transmission of communicable diseases through food, and the training of food service personnel in the why and how of sanitation. This is particularly true in hospitals, where the sick go to regain health.

The second question presents this problem: Is it possible to get pots and pans really clean by hand? It *is* possible to achieve cleanliness without mechanical devices, if the proper setup is provided, if employees have the right brushes and tools, and if the employees are trained and supervised properly. Pot and pan washing is often the first and lowest paid job assigned a new, untrained employee. This is only one problem. Often, the sinks are not of the correct capacity for the load, soaking and pre-rinsing are inadequate, wash water is not changed often enough or kept hot enough, and proper amounts of detergent are not used. Much of the drudgery of pot-and-pan washing can be relieved by installing a pump unit device for existing sinks which permits pre-soaking and soil removal with a mechanical action.

Aircraft Food Sanitation. This, the sixth in a series of articles on airline food service management, deals specifically with sanitary measures. A most important part in this sanitation program is played by the U.S. Public Health Service, which has published a number of booklets and lists giving recommendations and standards for airlines and airline caterers to follow. Cited in this article are recommendations on temperature control of foods, purchase of milk products, equipment used in transportation, galley equipment, and box lunches. Handling of soiled dishes (which are not scraped or rinsed while in flight) and facilities for disposal of food service waste at airports are also discussed.

Judging Flooring. What are some of the guides a buyer can use when selecting resilient floor coverings? To compare performance of the various floorings, a chart is shown which gives relative ratings on such qualities as comfort; quietness; service life; gloss; resistance to alkalies, acids, and solvents; maintenance; load limits; and price. A discussion is also included on things to know about resilient floors, including rubber flooring, vinyl, linoleum, cork, asphalt, and vinyl asbestos.

THE MODERN HOSPITAL

Vol. 94, March, 1960
*How to get good meals from ground meat. R. Staggs.—p. 130.
*When patients plan menus, they like the food. E. B. Guernsey.—p. 136.

Good Meals from Ground Meat. Ground meat dishes are popular because of their ease of preparation, variety in flavor combinations, adaptability to menus for any meal, and high nutritive value. A top quality product results from following certain rules. The proportion of fat to lean is important (relating to both nutritive value and palatability) and should be approximately one part fat to three parts lean. The size of grind is important, as is refrigeration (not exceeding two to three days for maximum quality). Ideas for meat combinations, seasonings, extenders, and ways of serving are given.

Patients' Menu Committee. Here is a plan for systematic nutrition education among hospital patients which, in addition to sugar coating nutritional information, established rapport with the patients, gave new insight on patient likes and dislikes, disclosed areas in which supervision had been sketchy, and re-emphasized the value of explanations in advance. Four patients, two men and two women, were selected to assist the dietitian in planning a week's menus. As the project developed, these patients were made aware of planning as it related to nutrition, to available equipment, to personnel, to eye and taste appeal, and so on. By role playing after the original planning was completed, a tape recording was made and broadcast to all patients on the hospital radio system. The project resulted in unusually good acceptance of the week's meals by most of the patients.

NRA NEWS

Vol. 3, March, 1960
*A guide to spices.—p. 11.
*Recipe for safety. R. Ellis.—p. 30.

Spices. A dash of spice is the quickest, least expensive way to bring individuality to standardized food items. Tips on the how and when of seasoning, storage of spices, and rehydration of dehydrated vegetable seasoning are given. This information is followed by a listing of fifty-five spices and their uses. In addition, a spice chart gives in recipe form suggested seasonings for a variety of appetizers, soups, meats, fish and poultry, sauces, vegetables, desserts, and salads and dressings. This information is presented with the cooperation of American Spice Trade Association.

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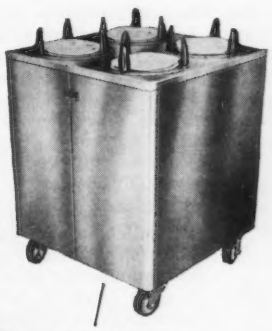
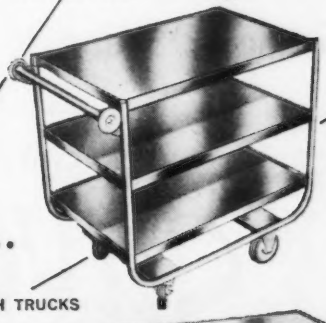


DISH LIFTERS

TRAY LIFTERS



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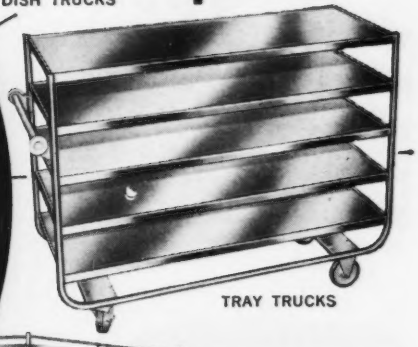

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Recipe for Safety. Revision of the recommended practice for "Safe Operation of Kitchen Equipment" is presented. Instructions are given for the following pieces of equipment: slicer, chopper or food cutter, attachment to chopper or mixer, peeler, steamers, toaster, coffee urns.

PERSONNEL JOURNAL

Vol. 38, April, 1960

*An evaluation system for administrators. R. N. Traxler, Jr.—p. 418.

*Conflict on the management team. B. Feiden. —p. 424.

Evaluation System for Administrators. A scoring system for measuring the characteristics and traits required in administrative people is presented. Areas of testing relate to knowledge, performance abilities, and attitudes. The score sheet which is to be used as an analytical tool is general in nature, since the method would have to be refined, experimented with, and fitted to the need of each organization. Objectivity is the aim of the system.

Conflict on the Management Team. The concept that the management of an organization should work together in close harmony without major disagreement or friction has become an accepted axiom that requires re-examination. If the executives are not in conflict with one another, the organization will suffer due to a lack of forceful and effective administration. Colleges and universities are attempting to respond to the professed need to prepare students to fit into the management concept of the team player. A generation of conformers is in the process of entering industry. If they are molded this way, they are not being properly equipped to face the competitive and conflicting situations that lie ahead. Advance to top managerial positions requires more than technical competence and good team personality. These men must be willing to compete for promotion; they must have imagination to conceive new ideas and defend unpopular concepts; they must adjust to the group but not be absorbed by it. To discard the team management philosophy in favor of a balance of conflicting interests is not easily done; it imposes on the chief executive more line responsibility for decisions. It also releases the pressures for conformity and breaks down the fiction of agreement. In this atmosphere, new executive talent will more readily develop and grow.

RESTAURANT MANAGEMENT

Vol. 86, April, 1960

*The three R's of school feeding. A. Goldberg. —p. 44.

*Spices and herbs in today's cuisine. R. Cremona.—p. 76.

*Spring housecleaning. A. Eiss and G. Eiss.—p. 90.

School Feeding. The Los Angeles public school cafeteria system operates 432 cafeterias on a $15 million current annual budget and is the largest single feeding program in the U.S. It is also one of the most efficient and inventive operations, as the result of a survey and recommendations made by a food service consultant firm. The system is entirely self-supporting, mainly as the result of the development of a central manufacturing kitchen, where basic foods are cooked or mixed, stored in large walk-in freezers, and delivered on order to the individual cafeterias. Food is taken directly to the freezer from the cooking pots or ovens. The packaging procedure is described. A training program has been developed which has simplified the problem of providing staff for approximately fifty new school cafeterias per year. The system is believed to have the only completely palletized warehouse in the nation. Everything is on wooden pallets to facilitate handling by mechanized fork-lift equipment. Other interesting innovations are the "portable cafeterias" designed to service schools with no cafeterias of their own, and the serving plans. The newest plan, called the "Scramble System," employs a square cafeteria with food display counters along three walls, with cashiers and turnstiles along the fourth. A given number of students are allowed at one time to scramble around to select their food, pass the cashier, and go to their

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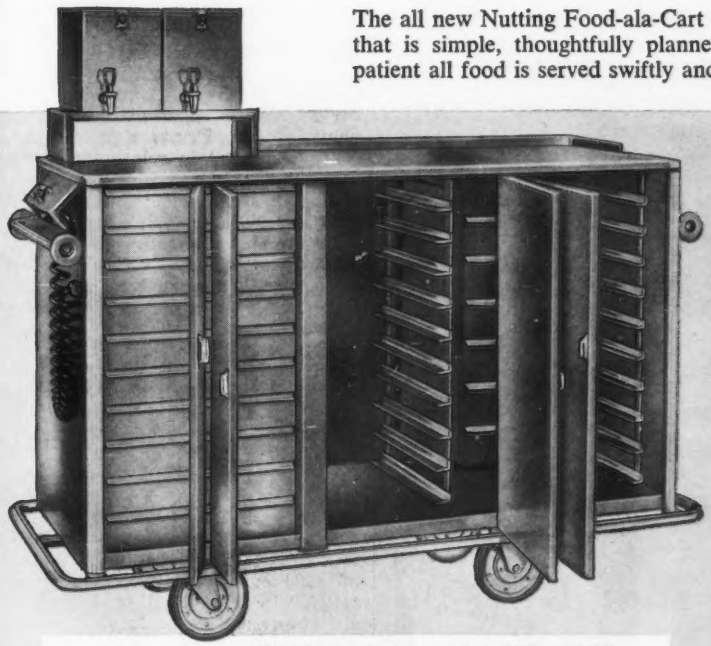

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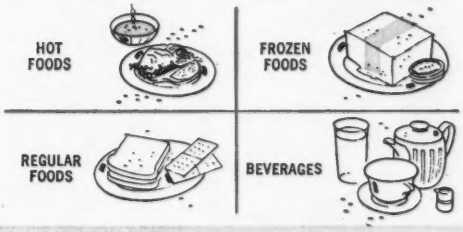

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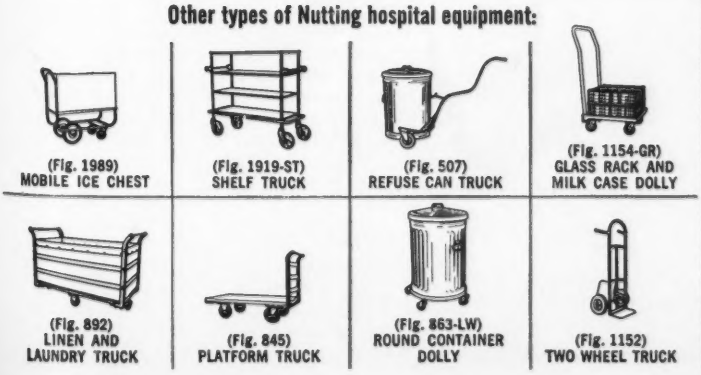
(Fig. 1989) MOBILE ICE CHEST
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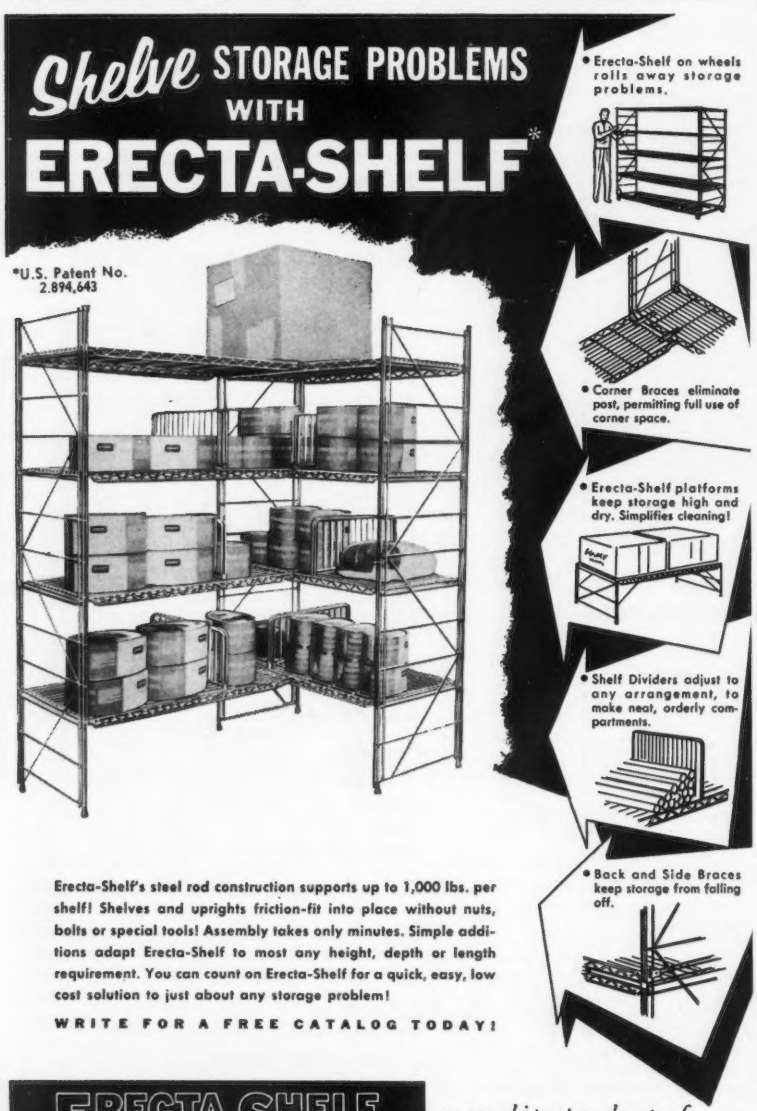
tables. A final point is the careful design for efficiency; as a result, the average cafeteria calls for 1200 sq. ft. of space as compared with the national average of 1500 to 1800 sq. ft.

Using Spices and Herbs. Extensive use of spices and herbs is a recent development in our country. Today, however, with greater availability of top quality products and with the public becoming educated to their use, herbs and spices are a must. Properly and knowingly used, they can add greatly to the popularity and prestige of a restaurant's cuisine. Recipes are given for jambalaya, veal scaloppine, barbecued spareribs in spicy sauce, and oxtail soup.

Spring Housecleaning. Although every season of the year is housecleaning time for restaurant managers, it is well, periodically, to see if everything is in order. Suggestions are made for items to note in the kitchen, the dining area, storage rooms, and rest rooms. The exhaust hood should be checked and cleaned. Proper cleaning equipment for various jobs is discussed. Equipment requiring cleaning includes ovens, dishwashers, refrigerators, and garbage cans. Safety precautions related to special cleaning jobs are cited. Also of interest is the emphasis the author has placed on problems of housecleaning outdoors.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VOLUME FEEDING MANAGEMENT

Vol. 14, April, 1960

*Fruit salad plates. E. Blair.—p. 13.
*Dry milk: a triple-threat substitute.—p. 18.
*How to boost volume 50%. W. J. Miller.—p. 22.
The permanent elegance of ceramic surfaces.—p. 29.
*What makes a good tray?—p. 32.
*Product and evaluation report: food mixers.—p. 57.

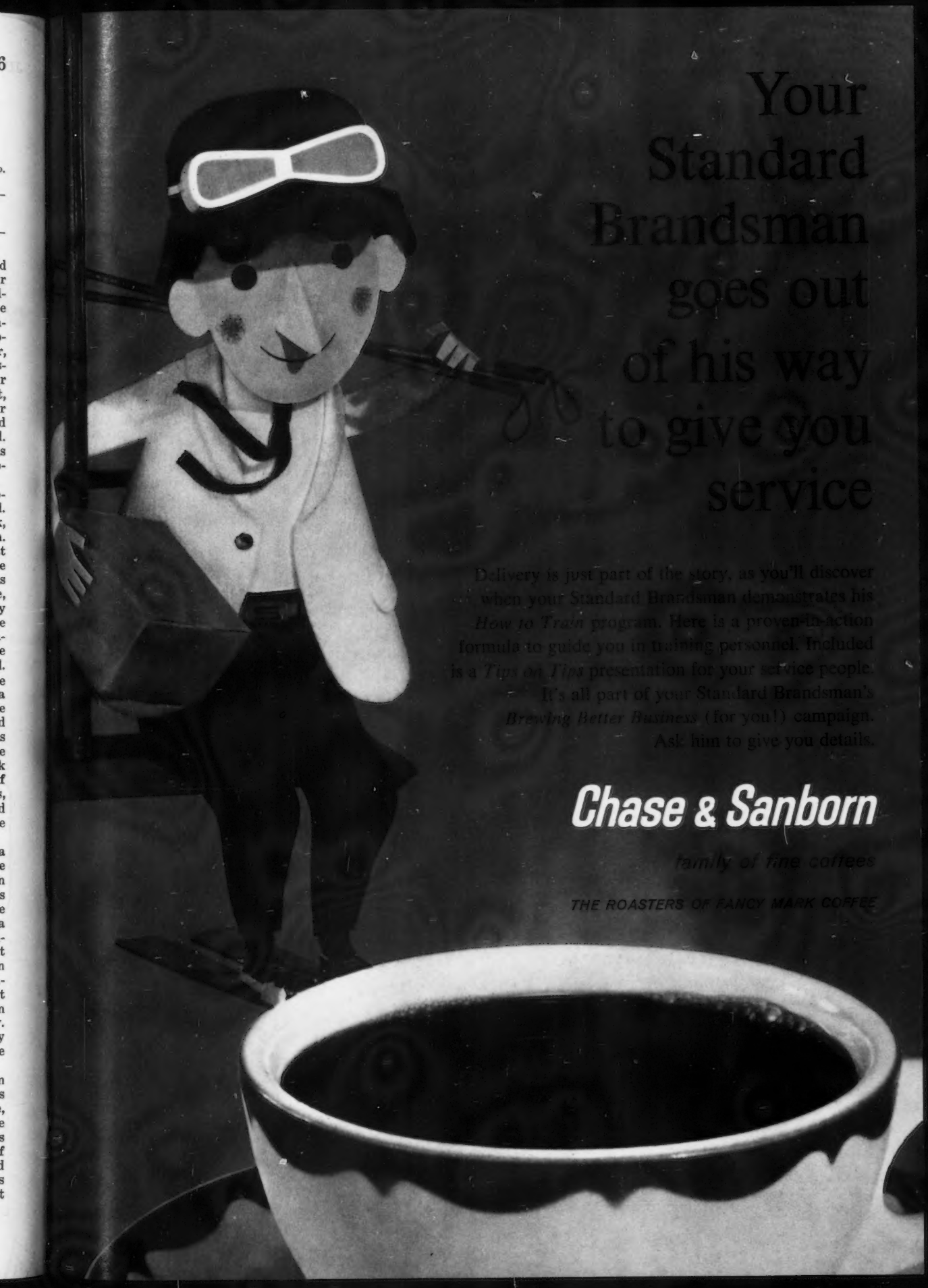
Fruit Salad Plates. Fruit salad plates are gaining in popularity for noon meals. "Side" salads are excellent sellers, too. No matter what the salad, the same rules apply: fresh-crisp, thoroughly dry greens; top-notch ingredients; contrast in color, flavor, and texture; and a light artistic touch. Directions are given for cleaning greens and preparing fruit, for arranging salad plates, and for using gelatin. Fruits that sink and fruits that float in gelatin are listed. Ten interesting salad combinations are given, with instructions for preparation and accompaniments.

Handy Dry Milk. Dry milk is economical and handy to keep on hand. It comes as nonfat or whole dry milk, either spray-dried or in crystal form. The crystal form dissolves the most readily. Dry milk products vary one from another according to the process by which they are made. Therefore, it is a good rule to weigh the dry milk as it comes from the package rather than use it by measure. Features of each type of dry milk are pointed out, and uses are discussed.

University Cafeteria. The Tulane University (New Orleans) cafeteria is a new facility serving an average of 4000 customers daily as opposed to 2700 in the old set-up. It includes a restaurant for the faculty, private dining rooms, a banquet hall, a snack bar, and a cafeteria. A maximum of self-services is employed (salads, desserts, beverages). Pictures and diagrams help one to visualize the installation.

A Good Tray. The ideal cafeteria tray should be able to withstand the extremely rough handling received in commercial establishments for years without any physical change in the tray itself. Properties of cafeteria tray materials are charted and evaluated. Hard rubber was the first material to vie with aluminum in cafeteria trays. However, it is expensive and unattractive. The least expensive is the brown phenolic resin tray, but this type warps easily. Advances in the plastics industry have resulted in a highly acceptable tray—glass-reinforced polyester.

Evaluation of Food Mixers. An evaluation of food mixers includes the following points: sizes available, selection of proper size, maintenance problems, right location, differences in design and function, importance of bowl design, and attachments and accessories. Several brands of mixers are pictured, with information about their manufacture.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THE ROASTERS OF FANCY MARK COFFEE

Your Annual Meeting—Cleveland: October 18 to 21

This issue: Special Events, 43rd Annual A.D.A. Meeting

Among the first persons to arrive at the scene of the Annual Meeting each year are the directors and staff members of the sixty-five dietetic internships. They devote a full day, the Saturday before the meeting opens, to discussions which have helped them maintain the strengths of their educational programs through the years.

This year, faculty members of home economics departments of colleges and universities in all sections of the country will join the internship directors in Cleveland for a session on Sunday afternoon, October 16. These groups meet annually to exchange ideas on the under-graduate and post-graduate education of the intern.

Our desire to explore the realms of the four Sections—Diet Therapy, Food Administration, Community Nutrition, and Education—has resulted in the decision to devote Monday evening to considerations of these areas. Panelists will present their views, and opportunity for spontaneous discussion will follow. If it can be assumed that birds of common interests flock together, the arrangements of the evening will enable you to join friends and to welcome newcomers whose professional life is similar to yours.

Plan to arrive on Monday or earlier, in time to register before dinner. Registration will begin at 2 o'clock on Sunday.

Tuesday will mark the exodus from the Sheraton-Cleveland Hotel to the Cleveland Public Auditorium, which is within walking distance. The opening session will begin at 10:30 a.m., and the exhibition area will start to receive visitors at 12 noon.

Representatives of approximately two hundred commercial organizations will be hosts to the members until 10:00 o'clock Tuesday evening. A buffet supper will be served at the auditorium, for the convenience of members who will want to see a number of the exhibits early in the week. It is suggested that they devote a certain portion of each day to acquaint themselves with recent developments in food products, food service equipment, and related lines. The exhibition area will close Thursday afternoon.

Members of the executive boards of state dietetic associations will breakfast together Wednesday morning at the Sheraton-Cleveland.

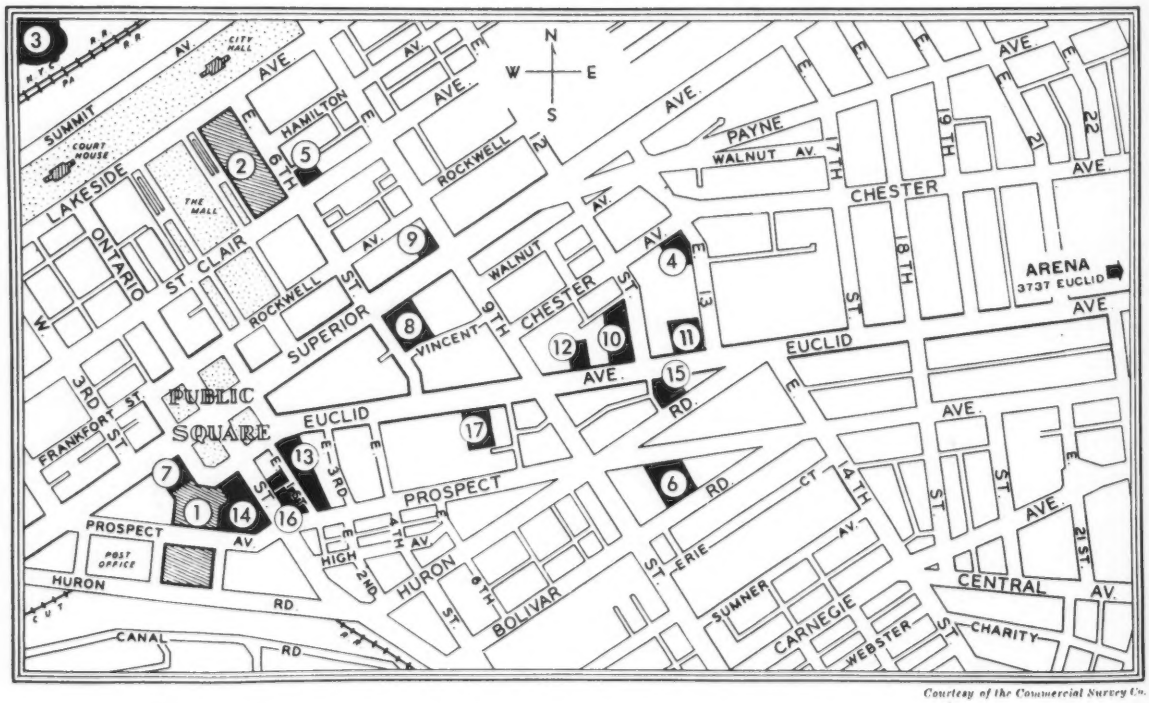
College and university alumnae groups will hold their dinners on Wednesday evening, and the internship alumnae will have their respective breakfasts on Thursday or Friday.

Traditionally, the History of Dietetics and Nutrition luncheon will take place on Friday. The speaker of the event this year will be Dr. Conrad A. Elvehjem, President of the University of Wisconsin.

On Friday, the final day of the Meeting, all of the sessions will be held at the Sheraton-Cleveland.

If you have not attended an Annual Meeting in recent years or ever, you have a revelation in store for you. You'll find it brisk and stimulating—worth every ounce of effort you've given to take the trip. The "keeping-up-with-the-time" program is designed for you, to help you become more effective as a professional person.

MAP OF DOWNTOWN CLEVELAND



Courtesy of the Commercial Survey Co.

1—Terminal Tower
2—Public Auditorium
3—Municipal Stadium
4—Manger Hotel
5—Auditorium Hotel
6—Pick-Carter Hotel
7—Sheraton-Cleveland Hotel
8—Hollenden Hotel
9—Olmsted Hotel
10—Statler Hilton Hotel
11—Sterling Lindner Co.
12—B. R. Baker Co.
13—The May Co.
14—Higbee Co.
15—Halle Bros. Co.
16—The Bailey Co.
17—Wm. Taylor Son & Co.

IMPORTANT . . . MAIL YOUR APPLICATION PROMPTLY

Application for Housing Accommodations

THE AMERICAN DIETETIC ASSOCIATION

Cleveland, Ohio • October 18-21, 1960

For your convenience in making hotel reservations for the coming meeting of THE AMERICAN DIETETIC ASSOCIATION, hotels and motels, with rates, are listed below. Use the form at the bottom of this page, indicating your first, second and third choice. Because of the limited number of single rooms available, you will stand a much better chance of securing accommodations of your choice if your request calls for rooms to be occupied by two or more persons. All reservations must be cleared through the Housing Bureau. ALL REQUESTS FOR RESERVATIONS MUST GIVE DEFINITE DATE AND HOUR OF ARRIVAL AS WELL AS DEFINITE DATE AND APPROXIMATE HOUR OF DEPARTURE, ALSO NAMES AND ADDRESSES OF ALL PERSONS WHO WILL OCCUPY ACCOMMODATIONS REQUESTED *MUST* BE INCLUDED.

Hotel	Single Bed	Double Bed	Twin-Bedded	Suites
Auditorium	$6.00- 9.50	$7.75-11.50	$11.00-14.00	$28.00-38.00
Manger	6.00-10.00	9.00-11.00	10.00-14.50	22.00-32.50 2 rms.
		Studios	14.50-30.00	39.00-60.00 3 rms.
Pick-Carter	6.50-10.75	9.50-14.00	11.00-16.00	27.50-37.50 2 rms.
				41.50-51.25 3 rms.
Sheraton-Cleveland*	7.00-11.00	10.50-14.50	13.50-20.50	26.00-51.50 2 rms.
				47.00-70.00 3 rms.
Statler-Hilton	6.50-12.50	13.00-16.00	14.00-28.00	28.00-39.00 2 rms.
		Studios	16.00-30.00	51.00 3 rms.
Motel				
Colonial House Motel	7.50	9.00	10.00	
Colony Motor Hotel	4.00	6.00		
Lake Erie Motel	8.00	11.00-14.00	14.00	

In the event that the hotel room rate structure is changed prior to the above convention these rates will be changed accordingly.
*Headquarters hotel

ALL RESERVATIONS MUST BE RECEIVED PRIOR TO SEPTEMBER 15, 1960

Hotel Reservation Bureau, A.D.A.
Cleveland Convention Bureau
511 Terminal Tower
Cleveland 13, Ohio

Please reserve the following accommodations for: THE AMERICAN DIETETIC ASSOCIATION Convention in Cleveland, October 18-21, 1960:

Single Room_____ Double-Bedded Room_____ Twin-Bedded Room_____

2 Room Suite_____ Other Type of Room_____

Rate: From $_____ to $_____

First Choice Hotel_____
Second Choice Hotel_____
Third Choice Hotel_____

Arriving at Hotel (date) _____ hour ____ A. M. ____ P. M. Leaving (date) _____ hour ____ A. M. ____ P. M.

THE NAME OF EACH HOTEL GUEST MUST BE LISTED. Therefore, please include the names of *both* persons for *each* double room or twin-bedded room requested. Names and addresses of all persons for whom you are requesting reservations and who will occupy the rooms asked for:

_____

_____

_____

(Individual Requesting Reservations)

Name _____

Address _____

City and State _____

If the hotels of your choice are unable to accept your reservation the Housing Bureau will make as good a reservation as possible elsewhere provided all hotel rooms available have not already been assigned.

BIOGRAPHICAL NOTES FROM THE HISTORY OF NUTRITION

Eugene Floyd DuBois—June 4, 1882–February 12, 1959

An understanding of the energy requirements of the human organism and factors influencing it is one of the bases of the science of nutrition. Lavoisier and his laboratory assistant, Seguin, conducted the earliest human experiments on respiratory exchange. The foundation of calorimetry and the basic principles were developed by Voit, Pettenkofer, and Rubner and others in Germany in the last half of the nineteenth century. Atwater, who studied under Voit, built the first calorimeter in this country, and many have contributed to the development of knowledge of energy requirement.

A pioneer in the study of energy metabolism especially in relation to disease conditions, was Eugene Floyd DuBois. His book, *Basal Metabolism in Health and Disease,* which went through three editions (1924, 1927, 1936) was for many years the standard work on this subject. In his early work, DuBois sought to establish a standard of metabolism. He confirmed Rubner's earlier work that basal metabolism in normal human beings is proportional to the surface area as measused by Meehs' formula. Then DuBois and his cousin developed a better formula for measuring surface area. On this basis, DuBois established certain normal constants for human beings with due regard to their size, sex, and age. He conducted many experiments on the metabolism of patients with various disease conditions as well as on healthy individuals.

Eugene F. DuBois was born in West New Brighton, Staten Island, New York, on June 4, 1882. He was the son of Eugene and Anna G. (Brooks) DuBois. His father died when he was only nine. From his mother he gained a desire for an education and a love of books and outdoors. When he was sixteen he spent a summer as a volunteer orderly at an Army hospital, and from then on, he decided to study medicine. He obtained his bachelor's degree from Harvard (1903) and his M.D. from Columbia (1906). He then studied pathology in Berlin. Two years were spent as an intern at Presbyterian Hospital, New York City, after which he was appointed Assistant Pathologist there (1909). The following year he became Instructor in Applied Physiology at Cornell University Medical College and remained on that faculty with various appointments including Professor of Medicine (1930-41) and Professor of Physiology (1941-50). In 1913, he also became Medical Director of the Russell Sage Institute of Pathology, from which came many of his research publications.

During World War I, DuBois served in the Navy as an expert in the toxic environments found in gas warfare, in submarines, and in deep sea diving; in World War II, he was adviser in aviation medicine. He was awarded the Navy Cross in 1919.

Russell Wilder tells that plans for a nutrition unit at St. Marys Hospital, Rochester, Minnesota, were drawn with the aid of Eugene DuBois. Having been a sailor much of his life, DuBois used the yachtsman's principle of having all the sails in range of vision from the helm, and so the nutrition unit was designed with the metabolic kitchen where it could overlook all that went on in the wards.

His students described DuBois as a great teacher because he worked with his students instead of over them. His wide interest in medicine, research, and administration won him many honors; he was elected to the National Academy of Sciences, received an honorary Doctor of Science degree from the University of Rochester (1948), the Kober Medal of the Association of American Physicians (1947), and was president of several professional societies, including the American Institute of Nutrition (1936).

REFERENCES: Wilder, R. M.: Recollections and reflections on education, diabetes, other metabolic diseases and nutrition in the Mayo Clinic and associated hospitals, 1915-50. Perspectives in Biol. & Med. 1: 237, 1958; Who's Who in America, Vol. 26. Chicago: A. N. Marquis Co., 1950; Dill, D. B.: Eugene F. DuBois, environmental physiologist. Science 130: 1746, 1959.—*Contributed by E. Neige Todhunter, Ph.D., Dean, School of Home Economics, University of Alabama, Tuscaloosa.*

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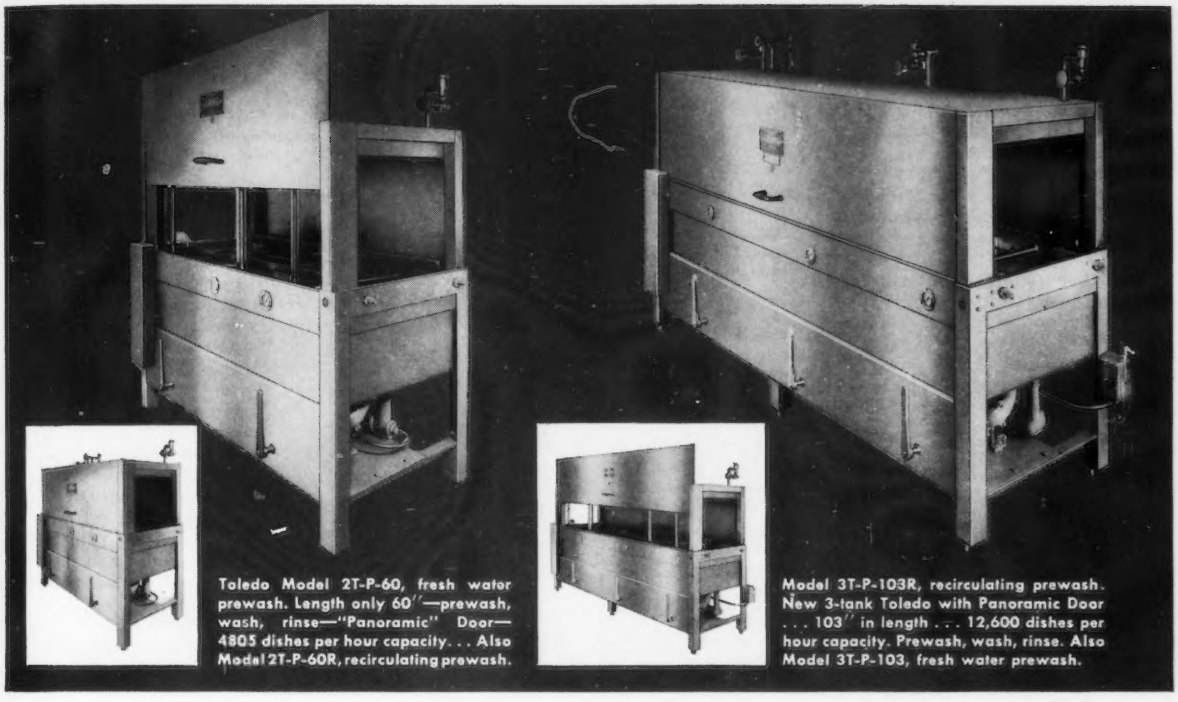

Toledo Model 2T-P-60, fresh water prewash. Length only 60″—prewash, wash, rinse—"Panoramic" Door—4805 dishes per hour capacity. . . Also Model 2T-P-60R, recirculating prewash.

Model 3T-P-103R, recirculating prewash. New 3-tank Toledo with Panoramic Door . . . 103″ in length . . . 12,600 dishes per hour capacity. Prewash, wash, rinse. Also Model 3T-P-103, fresh water prewash.

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Toledo "10" Slicer . . . Combines handsome design with fast, easy operation. Easy to clean—parts tilt away or are quickly removable. Efficient sharpening. Positive gauge plate control.

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Dishwashers . . . Fast, thorough, dependable. Available in door, counter, conveyor and rackless types. Advanced design, easy cleaning.

Hi-Speed Mixers Feature positive gear drive: clean, efficient operation. Model TM-20 (20 qt.) shown. Also 30 qt. and 60 qt. sizes.

***Journal* Change.** This year, the editors are "experimenting" with the JOURNAL in one respect. As our JOURNAL has grown larger and larger in total number of pages during the last few years, it has become more and more unwieldy when bound in a single volume at the end of the year. We will, therefore, this year publish two volumes for the calendar year. Volume 36 ends with this issue. Beginning on page 657, you will find the indexes which are normally published in the last issue of a volume. Volume 37 will begin with the July issue, and a six-month index for it will appear in the December issue.

The editors would be pleased to learn our readers' reactions to this change. Do you like it? Would you prefer to have only one volume each year, even though it is big and heavy, or are two volumes more convenient?

Another innovation with this issue is the inclusion of the addresses of the magazines, periodicals, and journals which are scrutinized and abstracted in our Current Literature Section. Many readers have requested the addresses of these publications so that they may subscribe to them. We hope that this addition to the JOURNAL will be helpful to our readers.

Change in Army Personnel. Lt. Col. Katharine E. Manchester, AMSC, will become Chief, Dietitian Section, and Assistant Chief, Army Medical Specialist Corps, on the retirement of Lt. Col. Helen M. Davis, AMSC, in July. Col. Davis has held this position since July 1956.

Col. Manchester is presently Chief, Food Service Division, Brooke General Hospital, Ft. Sam Houston, Texas, a position she has filled since 1955. She has more than nineteen years of Army service, having been assigned previously to Walter Reed General Hospital, Washington, D. C.; U.S. Army Hospital, Ft. Leonard Wood, Missouri; Valley Forge General Hospital, Phoenixville, Pennsylvania; and 130th Station Hospital overseas, with additional duty as Food Service Consultant to the Chief Surgeon, Headquarters, U.S. Army Europe.

In 1948, Col. Manchester was selected to attend Cornell University for advanced study in institution and personnel management. She received a Master of Science degree in 1949. In 1943, she was awarded the Army Commendation Ribbon for outstanding performance during an assignment in the Army Surgeon General's Office as Chief, Dietetics Consultants Division.

She is currently regional representative for Area IV of the A.D.A. Disaster Feeding and Civil Defense Planning Committee.

Air Force Dietitian Honored. In a special ceremony on April 6 in Columbus, Ohio, the Air Force presented to Capt. Filomena R. Manor the Air Force Commendation Medal. The citation commented on the distinguished service Capt. Manor gave as Chief of Food and Dietetic Service, 36 Tactical Hospital from December 2, 1957 to September 4, 1959. "Through her devotion to duty and outstanding interest in food and dietetic problems, Captain Manor was instrumental in providing an increased capability within her area of activity and achieving an enviable reputation for the hospital." Capt. Manor has been doing graduate work this past year at The Ohio State University on assignment from the Air Force.

Bessie Brooks West Scholarship. Through contributions of former students, colleagues, and friends, the Bessie Brooks West Scholarship has been established at Kansas State University. Mrs. West, whom it honors, is well known to A.D.A. members as a Past-President, as our former Continuing Education Services Director, as author of "West and Wood," and as Head of the Department of Institutional Management at K-State from 1928 to 1956. The first recipient of the scholarship is Greta Johnson, a sophomore in dietetics and institutional management. Miss Johnson was selected for her academic record and potential for leadership in dietetics and institutional management.

Following is a list of foods which the USDA expected to be in plentiful supply during June:

Milk and dairy products
Peanut butter
Spring vegetables
Vegetable fats and oils

Frozen Fruits for June. Here are suggestions of the National Association of Frozen Food Packers for June menu items:

Frozen Fruits and Desserts

FROZEN JUICE COMBINATIONS — new mixtures are now becoming available; the ades are great favorites in summer, and frozen concentrated citrus juices are also good thirst-quenchers.

PEACHES—for an unusual shortcake, place frozen sliced peaches on warm cake square and top with melted caramel candy.

STRAWBERRIES—use whole strawberries defrosted just to the icy stage; serve just as fruit with a cookie.

FROZEN DESSERTS—new frozen pastry desserts, some fruit-filled are appearing.

Frozen Vegetables

PEAS, GREEN—use in a main dish salad with cubes of cheese or chicken.

SPINACH—a spinach soufflé receives many orders, as does "just good old" creamed or buttered spinach.

POTATO PRODUCTS—many types of products are available to add menu variety.

Awards to Food Technologists. This year's recipient of the Nicholas Appert Award of the Institute of Food Technologists was Dr. Ernest H. Wiegand. Dr. Wiegand served as faculty member and later as Head, Department of Food and Dairy Technology, Oregon State College, Corvallis, from 1919 until his retirement in 1952. Presentation of the Award, which carries with it an honorarium of $1000 and a Bronze Medal, was made at the Annual Meeting of the Institute of Food Technologists on May 17.

The 1960 Babcock-Hart Award of the Institute of Food Technologists, donated by The Nutrition Foundation, went to Dr. Arnold H. Johnson, Director of Research, National Dairy Products Corporation, Glenview, Illinois. This award is made for distinguished technologic developments or scientific contributions which lead directly to technologic developments that have, in actual practice, influenced the nutritional well-being of the public.

Symposium on Food and Health. To celebrate the dedication of a new Food Research Building at the New York State Agricultural Experiment Station, Geneva, a Symposium on Food and Health was held May 5 and 6. The program included:

"Food in National and International Welfare"—J. George Harrar, Director for Agriculture, Rockefeller Foundation, New York City

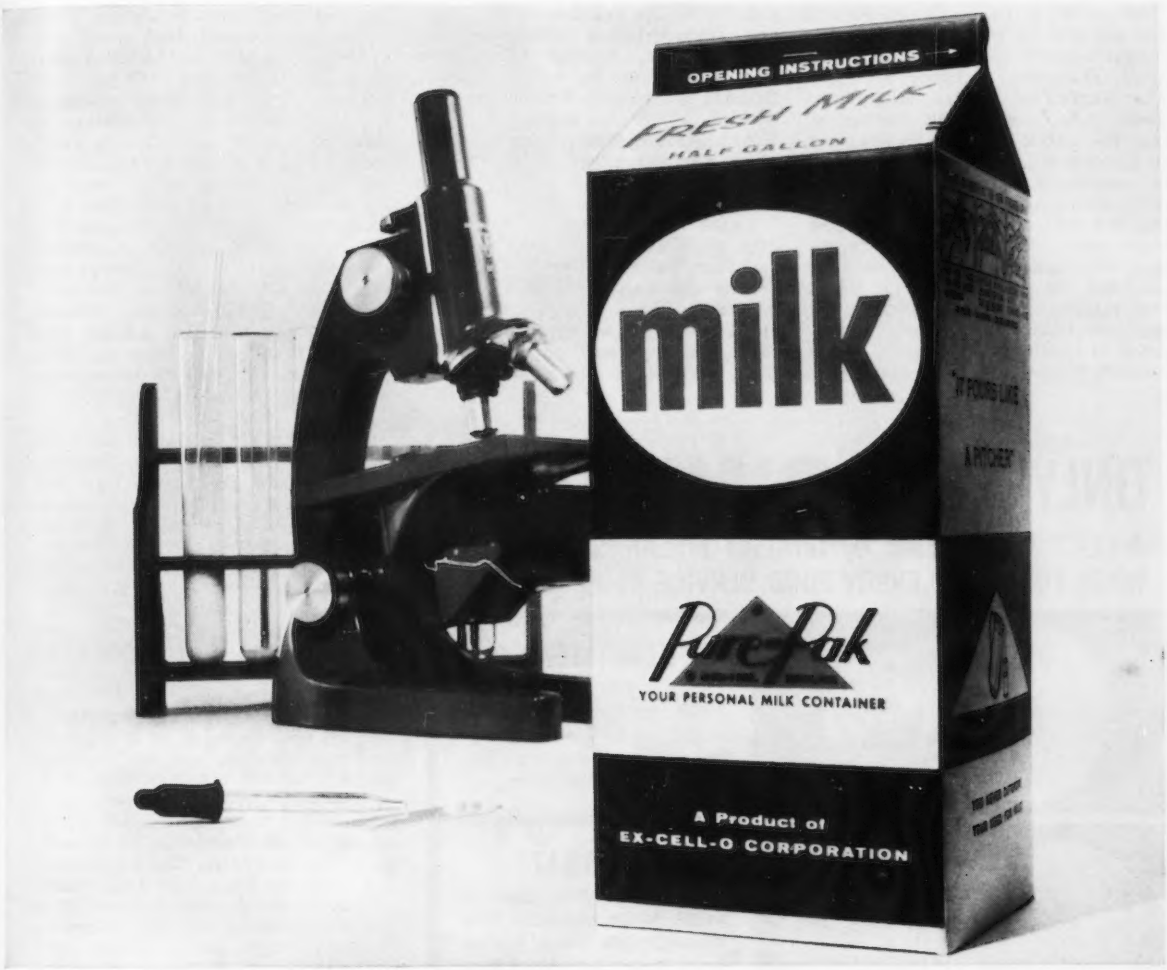
"What Is an Adequate Diet for Young and Old?"—William J. Darby, M.D., Director, Institute of Nutrition, Vanderbilt University, Nashville, Tennessee

"The Role of Chemistry and Technology in the Development of Modern Foods"—Emil M. Mrak, Chancellor, University of California, Davis

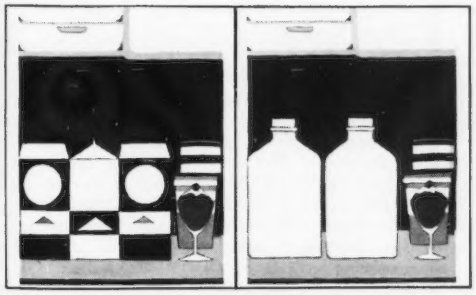
"Public Education and Food Attitudes"—Philip L. White, Ph.D., Executive Secretary, Council on Foods and Nutrition, American Medical Association, Chicago

"What Lies Ahead in Nutrition?"—John B. Youmans, Ph.D., Technical Director of Research, U.S. Army Medical Research and Development Command, Office of the Surgeon General, Washington, D. C.

Public Health Traineeships. Public Health traineeships in the amount of $250 a month are again available



MOST SANITARY *way known to package milk...Pure-Pak!*



Pure-Pak cartons save 30% on valuable refrigerator space and eliminate wasted storage space needed for empty bottles.

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Cafeteria lines move quickly and smoothly when the handy half-pint size is used.

Ask your dairy supplier to deliver your milk in Pure-Pak cartons. Available in half-pint through half-gallon sizes.

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28 million times a day, in 26 countries, someone breaks the seal on a fresh Pure-Pak carton

from the U. S. Public Health Service for educational work leading to the master's degree in the various public health disciplines, including nutrition. The purpose of the traineeship program is to increase the number of qualified public health personnel and to bring new people into the field. It is understood, therefore, that applicants should have an interest in entering the field of public health. They must have completed bachelor's degree programs in nutrition and be accepted for admission to a school that conducts a nationally recognized graduate public health training program in nutrition. In addition to the monthly stipend, the traineeships provide for tuition and fees of the school and transportation allowances for field training. Further information may be obtained by writing: Chief, Division of General Health Services, Bureau of State Services, Public Health Service, Washington 25, D. C., or a regional office of the Public Health Service.

USDA Booklet Revised. An up-to-date version of the USDA's "Food for Families with School Children" (Home and Garden Bulletin No. 13) is now available. It lists amounts to buy and suggestions for using eleven food groups in planning weekly menus for a family of six, with four children ranging from eight to sixteen years of age. A low-cost food plan, estimated to cost from $37 to $39 weekly, according to January 1960 prices, is featured; it is also easily adaptable to larger or smaller families or to those with larger food budgets available. Sections on cooking and storing food are included, as well as purchasing information. Some vegetables have been reclassified in the new edition to call attention to vitamin A content, since the USDA's 1955 national food consumption survey showed that many U.S. diets were low in this nutrient.

Single copies of this booklet may be obtained on request from the Office of Information, U. S. Department of Agriculture, Washington 25, D. C.

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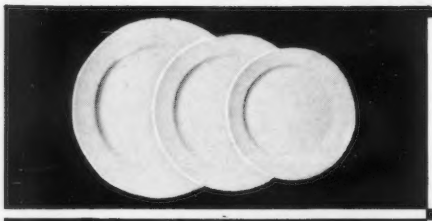

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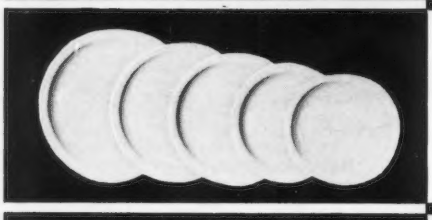

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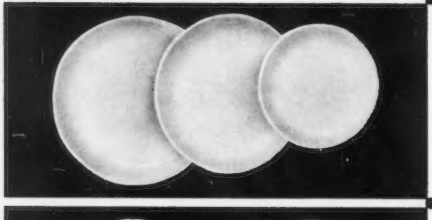

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Graceful coupe shape. Ideal for tea rooms, sandwich shops. Solid colors: Pink, Turquoise, Yellow, White.

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By the makers of Brookpark, melamine dinnerware for the home.

Nutrition in the Middle East. In November 1958, the FAO Nutrition Committee for the Middle East met for the first time in Cairo. Representatives from ten countries attended: Iran, Iraq, Italian Somaliland, Jordan, Libya, Morocco, Pakistan, Tunisia, Turkey, and the United Arab Republic. The committee first reviewed nutrition problems in countries of the Middle East. It then considered surveys of food consumption and the state of nutrition, education in nutrition, the training of nutrition workers, the development of national nutrition services, and the formulation of national nutrition policies. A number of recommendations were made which the committee hopes will receive careful attention of governments in the region. The representative from the League of Arab States also suggested the establishment of a regional nutrition institute. A report of the meeting has now been published as FAO Nutrition Meetings Report Series No. 25, *Report of the Nutrition Committee for the Middle East, First Session—Cairo, 18-26 November 1958.* It may be obtained for 50 cents a copy from: International Documents Service, Columbia University Press, 2960 Broadway, New York 27.

Booklet on Cultural Food Habits. "Eating in Different Languages" is the title of a mimeographed booklet prepared by Marion Mason, Consultant in Nutrition, Visiting Nurse Association of Chicago. In it, information on food habits of the six largest foreign or cultural population groups in Chicago are discussed—Italian, Japanese, Jewish, Polish, Puerto Rican, and southern. For each country or culture, characteristics of the food patterns are described in terms of the four-group food plan. Copies have been distributed to the staff nurses of The Visiting Nurse Association to help them in dealing with food problems they encounter in their work. They are cautioned, in working with such groups, that they should try to add to the already existing food pattern, rather than trying to change it radically. Requests for copies may be sent to Miss Mason, The Visiting

YOU FIGURE IT OUT!

See how much PET *Instant* can save on your milk bill!

. . . . .	fresh milk cost per gal.	.26	PET *Instant* cost per gal.
X.	no. of gallons you use	X.	no. of gallons you use
. . . . .	your present cost	. . . . .	your cost using PET *Instant*

Figure it by the day, the week, or the year—it always amounts to substantial savings when you use PET *Instant* for creamed dishes, gravies, sauces, soups—*all* your cooking and baking recipes calling for milk. PET *Instant* whips, too, for delicious desserts and toppings that save you even more.

PET *Instant* has all the protein, calcium and B-vitamins of fresh milk. Only the fat and water have been removed. It mixes almost faster than you can stir . . . dissolves completely.

Try the size package that's right for your day's needs. You can't tell the difference in cooking and baking, and just look what you save!

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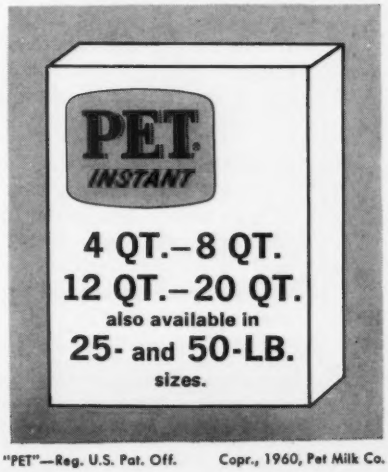
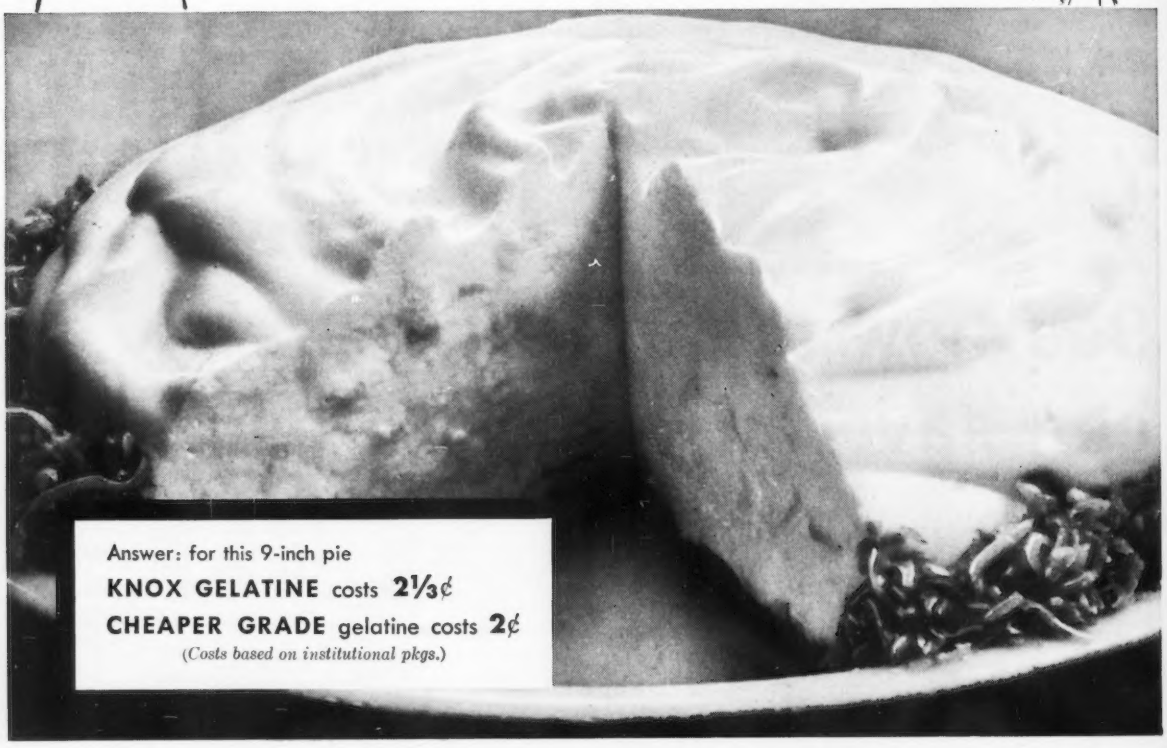


"PET"—Reg. U.S. Pat. Off. Copr., 1960, Pet Milk Co.

GUESS

what the unflavored gelatine costs for this Lemon Chiffon Pie...

(answer below)



Answer: for this 9-inch pie
KNOX GELATINE costs **2⅓¢**
CHEAPER GRADE gelatine costs **2¢**
(Costs based on institutional pkgs.)

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Whether a jellied dish is the chef's most gorgeous creation or the dietitian's simple Spanish Cream, the cost of the gelatine is only a tiny proportion of the total cost.

So why settle for anything but the best? Knox Unflavored Gelatine is always uniform in gel strength for sure results. Sets faster, frees refrigerator space for other foods. Made under rigid laboratory control to U.S.P. standards, Knox Gelatine is odorless and tasteless, plays up the full natural flavors of the fine, fresh ingredients you use.

Specify KNOX GELATINE in the new economical 3-pound package. You get more servings per pound with KNOX.

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Nurse Association of Chicago, 734 West 47th Street, Chicago 9.

Guidelines for Teaching Nursing Students. Just released is a report of a Joint Committee of the Maryland League for Nursing and the Maryland Dietetic Association, *Guidelines for Teaching Nutrition and Diet Therapy in Schools of Nursing.* The contents are divided into two major sections: "Knowledges, Understandings, and Abilities Needed by Nurses in Relation to Nutrition and Diet Therapy"; and "Learning Activities in Relation to Nutrition and Diet Therapy." In the latter section, material is tabulated under four headings: contributory objectives, expected behavior change, suggested content, and suggested learning activities. A bibliography is included, as well as "A Tentative Statement, for Discussion Only, on Understandings and Abilities Needed by Nurses in Relation to Nutrition and Diet Therapy," which is presented in an appendix. This mimeographed production is available as No. 48 of *The League Exchange* from the Department of Diploma and Associate Degree Programs, National League for Nursing, 10 Columbus Circle, New York 10.

A.D.A. Library News. A copy of the *New Jersey Diet Manual* has been added to the materials in the A.D.A. Library available for loan to members. This manual was prepared as a project of the Diet Therapy Section of the New Jersey Dietetic Association and bears the endorsement of the Medical Society of New Jersey, the New Jersey State Department of Health, and the New Jersey Hospital Association. The contents include chapters on: Recommended Dietary Allowances; routine hospital diets; modifications of the normal diet, i.e., pediatric diets, diets for pregnancy and lactation, and diets for older people; modifications in consistency; diabetic diets; low-calorie diets; sodium-restricted diets; fat-restricted diets; and tube feedings. Tables on food sources of minerals, fatty acids in food fats, purine content of foods, and food sources of vitamins are included, as well as a section on recipes.

Flavor Precursors Isolated. Aroma-bearing materials in meats, called flavor precursors, have recently been isolated by USDA scientists at the Eastern Utilization Research and Development Division, Beltsville, Maryland. Thus far, only minute amounts of these flavor-producing compounds have been extracted from beef and pork, but their identification may point the way to a process for flavoring algae which is being investigated by many researchers as a possible source of food and oxygen for space travel. In a report given in April before the American Chemical Society in Cleveland, researchers Irwin Hornstein and Patrick F. Crowe stated that the flavor-producing substances in lean beef or pork could be completely removed by extraction with cold water. When the extract is freeze-dried to a powder and heated, the rich aroma of roast meat was produced. When heated to the boiling point of water, the aroma-bearing compounds from beef fat smelled like "apples" or "deep-fat fried," and those from pork fat smelled like "cheese" or "fried bacon." Although the materials from the fat of both meats were roughly similar, the amounts and proportions of the different compounds varied widely.

Instant Sweet Potatoes. Instant sweet potatoes are now ready for the pilot-plant stage of development, according to a recent announcement by the USDA, although additional research and developmental work still remain to be done before such products will be in commercial production and available to consumers. Instant sweet potatoes are prepared by a process similar to that developed by the USDA for instant white potato flakes and have the characteristic bright color as well as the flavor of fresh puréed sweet potatoes. When added to hot water or milk, the sweet potato flakes are ready in 60 seconds to eat as mashed sweet potatoes or to use in a pie or casserole.

Missouri's Vocational Guidance Program. In Missouri, an Agricultural Extension Food Service Industry Marketing Program has been inaugurated under the co-sponsorship of the University of Missouri, its Agricultural Extension Service, the state Department of Education, and the Missouri Restaurant Association. Local education-industry "Food Service Industry Career Guidance Councils" will be formed in Missouri cities and communities, such councils being composed of representatives of all phases of the food service industry, vocational education, and school lunch programs. The mission of the local councils will be: to collect and disseminate information on careers in the food service industry; to interest youth in choosing careers in the food service industry; to provide for local training of both youth and present workers in the food service industry; and to provide a continuous and progressive local educational program.

The Division of Continuing Education and the Agricultural Extension Service of the University will coordinate resources of the University to support local programs and provide short courses and off-campus local management clinics, training courses for vocational teachers, a pool of audio-visual and other training aids, a vocational library, and a speaker's bureau of specialists.

The entire program will be coordinated by John M. Welch, newly appointed Extension Economist for the Food Service Industry Program and Associate Professor of Agricultural Economics at the University.

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To clean most all,
From tableware to dining hall
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. . . used by restaurant operators everywhere to de-stain and keep plastic and china stain-free. Helps keep dish machine clean too. Use regularly in the machine 2 or 3 times a week, along with other DuBois compounds. Packed in tight seal, control cartons to keep destaining power in. Ask your DuBois Representative about this and other dish machine products for all water conditions.
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There is a
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Table scraps and food preparation wastes from 100 to 2,000 settings per meal can be readily disposed of by one of the many models of Gruendler Disposers that grind waste into a fine slurry for instant disposal down the drain, ending scavenger service and waste handling.
Write for Brochure No. R-124. If possible, state number of meals you serve per setting for our recommendation of proper model. No obligation.
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News of State Associations

California Dietetic Association. A short evening course in "Current Development in Clinical Nutrition" was given this spring at the University of California, Los Angeles. The course content included: poisoning attributed to food, food misinformation, protein nutrition, dietary fat problems, and calcium and phosphorus metabolism. Joint sponsors of the course were: UCLA Medical Extension, California Dietetic Association Workshop Committee for Continuing Education, and the Los Angeles Region Diet Therapy Committee.

Nebraska Dietetic Association. April 7 to 9 were the dates of the Nebraska Dietetic Association's meeting in Grand Island, held jointly with the Nebraska Home Economics Association. The program included:

"Adequate Wiring"—Mike Mumgaard, Engineer, Agricultural Extension, University of Nebraska, Lincoln

"New Trends in Equipment"—Gwen Davis, Home Economist, Westinghouse Appliance Sales, Des Moines

"Ranges and What You Should Know about Them"—Arnold Barager, Associate Professor of Home Economics, University of Nebraska

"Electric Housewares" plus "Special Features on Electric Ranges"—Betty Buettner, Regional Home Economist, Consumers Institute, General Electric Company, Louisville

"Water Problems and How to Solve Them"—Elaine Weaver, Ph.D., Ohio Agricultural Experiment Station, Columbus

"Washers and Dryers"—Gwen Davis

"Work Simplification"—Stella Mitchell, Extension Service Specialist in Equipment and Work Simplification, USDA, Washington, D. C.

"Judging Your Equipment Needs"—Dr. Weaver

"America's No. 1 Health Problem: Overweight"—Clarence Elliott, M.D., Lincoln

The following will be the elected officers for 1960-61: President, Helen Shuput, Omaha; President-Elect, Florence Shelley, Omaha; Treasurer, Doris Kohlligian, Lincoln; and Secretary, Maxine Bohaboy, Lincoln.

New York State Dietetic Association. Governor Nelson A. Rockefeller proclaimed the week of April 16 to 22 as "Dietitians Week" in New York State—the dates coinciding with the spring meeting of the state association in Syracuse.

Work of the Education Section of the *Genesee Dietetic Association* this year has centered around continuing education. When a survey in the fall indicated a major interest in nutrition, a seminar on diabetes was planned. Dr. Joseph Izzo, a prominent diabetes specialist, was the featured speaker of the seminar, first speaking on "Newer Developments and Current Research in the Treatment of Diabetes" and later participating in a role-playing session. This technique, using a diabetic patient, the physician, a hospital dietitian, and a home-visiting nutritionist, was used to bring out problems of diabetic persons and ways of handling the food program. Lester Jenkins, Eastman Kodak Company's Training Department, also participated with a demonstration and film on "The Art of Interviewing."

The *Genesee Association*, with the Rochester Regional Hospital Council and the Adult Education Division of the Rochester School District, has begun a pilot training course for hospital food service supervisors.

The *Greater New York Dietetic Association* on April 27 presented the annual Mary Swartz Rose Lecture. Dr. Ruth M. Leverton, Associate Director, Institute of Home Economics, USDA, spoke on "Rose's Foundations for Nutritional Evaluation."

Ohio Dietetic Association. Cincinnati was the scene of the 39th annual meeting of the Ohio Dietetic Association on May 5 and 6. The program featured:

"Challenge of Change"—E. Neige

THE ALL NEW ... ELECTRA WITH THE UNIQUE MATCH-A-TRAY METHOD OF TRAY LOADING

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* Heavy Duty ¼ H.P. compressor.
* Ice cream freezer.
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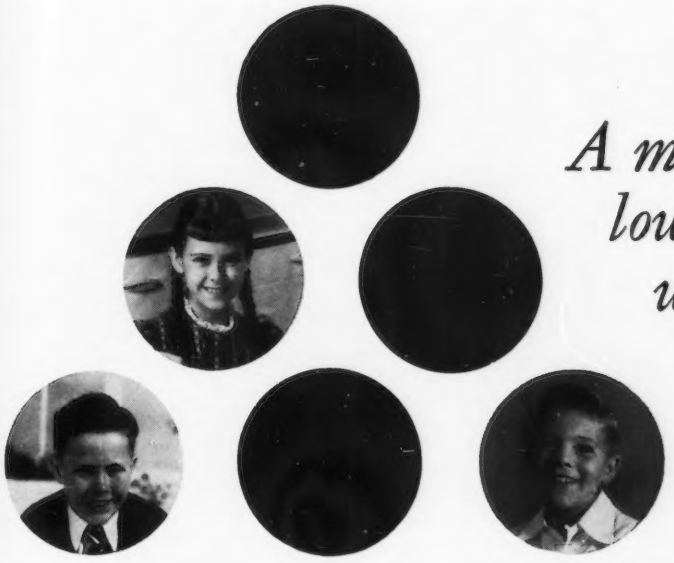

A moderate low-fat well-balanced breakfast for children 10-12 years of age

It has been found that those who develop obesity in childhood appear to have more of a dietary problem than those who develop obesity in the adult years. As a service to those advising about the obese child, a basic cereal and milk breakfast is worth consideration. *Its fat content of 10.9 gm. provides 20 per cent of the total calories, thus it is moderately low in fat.* It is well-balanced as shown in the chart below. The Iowa Breakfast Studies demonstrated that children of about this age have better grades and attitudes at school when they eat a *well-balanced* basic cereal and milk breakfast each morning.

Recommended Daily Dietary Allowances and the Nutritional Contribution of a Basic Cereal and Milk Moderate Low-Fat Breakfast*

Menu: Orange Juice—4 oz.;
Cereal, dry weight—1 oz.;
Whole Milk—4 oz.; Sugar—1 teaspoon;
Toast (white, enriched)—2 slices;
Butter—5 gm. (about 1 teaspoon);
Nonfat Milk—8 oz.

Nutrients	Calories	Protein	Calcium	Iron	Vitamin A	Thiamine	Riboflavin	Niacin equiv.	Ascorbic Acid
Totals supplied by Basic Breakfast	503	20.9 gm.	0.532 gm.	2.7 mg.	588 I.U.	0.46 mg.	0.80 mg.	7.36 mg.	65.5 mg.
Recommended Dietary Allowances—Children, 10 to 12 Years (36 kg.—79 lb.)	2500	70 gm.	1.2 gm.	12 mg.	4500 I.U.	1.3 mg.	1.8 mg.	17 mg.	75 mg.
Percentage Contributed by Basic Breakfast	20.1%	29.8%	44.3%	22.5%	13.1%	35.4%	44.4%	43.3%	87.3%

Cereal Institute, Inc.: Breakfast Source Book. Chicago: Cereal Institute, Inc., 1959.
Food & Nutrition Bd.: Recommended Dietary Allowances, Revised 1958. Natl. Acad. Sci.—Natl. Research Council Publication 589, 1958.
Watt, B. K., and Merrill, A. L.: Composition of Foods—Raw, Processed, Prepared. U.S.D.A. Agriculture Handbook No. 8, 1950.

**The allowance levels are intended to cover individual variations among most normal persons as they live in the United States under usual environmental stresses. Calorie allowances apply to individuals usually engaged in moderate physical activity. For office workers or others in sedentary occupations they are excessive. Adjustments must be made for variations in body size, age, physical activity, and environmental temperature.*

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A research and educational endeavor devoted to the betterment of national nutrition

Todhunter, Ph.D., Dean, School of Home Economics, University of Alabama, Tuscaloosa
"You and the Food Faddist"—Philip L. White, Ph.D., Council on Food and Nutrition, American Medical Association, Chicago
"Automatic Menu Selections"—E. K. Amundson
"How to Supervise the Quantity Baking Operation"—Michael Palmer, Restaurant Research Department, Procter and Gamble, Cincinnati
"Diabetes Today"—Harvey C. Knowles, M.D.
"Nutrition and Liver Disease"—Dr. Gordon Mindrum
"Are You a Good Director?"—Everett A. Johnson, Administrator, The Methodist Hospital, Gary, Indiana
"Public Health Implications of Radiological Health"—Dr. Conrad P. Straub
"Budget Planning, a Tool of Management"—Albin L. Pearson
"The Emotional Aspects of Illness"—Dr. Harold Hiatt
"Diet and Mentally Retarded Children"—Dr. Jack Rubinstein and Barbara Umbarger
"Effective Food Service through Improved Personnel Administration"—James F. Martin, Associate Professor of Business Administration, Xavier University, Cincinnati
"Hormones, Nutrition, and Hardening of the Arteries"—a panel discussion by a research team from May Institute, Jewish Hospital, Cincinnati
"Training for the Future"—Edith A. Jones, Clinical Center, National Institutes of Health, Bethesda, Maryland

Miss Jones attended the meeting as the national representative of A.D.A.

Oregon Dietetic Association. The Oregon Association met in Portland on April 9, to hear the following program:

"Pediatric Nutrition in Medical Management"—Donald Pickering, M.D.
"Anti-Coagulant Drugs"—Robert H. Bigley, M.D.
"Communication"—Mable Mack and Dolores Uria.

Pennsylvania Dietetic Association. The 27th annual meeting of the Pennsylvania Dietetic Association was held April 28 to 29 in Harrisburg. The program included:

"Dietitians Look to the Space Age"—Margaret Madden, Philadelphia
"Adventures in Research—Military and Space Feeding"—Col. N. T. Folwell, Chief, Air Force Services Office, Marietta Air Force Base
"Prescription: Hypnosis"—Frank J. Corbett, M.D., Fayetteville, Pennsylvania
"Creative Thinking"—David Cohen, Ph.D., Chief, Psychology Service, Va Hospital, Coatesville, Pennsylvania
"Food Additives"—Robert C. Stanfill, Director, Philadelphia District, Food and Drug Administration
"The 1960 White House Conference on Children and Youth"—Lorna Sylvester, Executive Secretary, Governor's Coordinating Committee.
"Food Service Supervisors—Their Training and Contributions"—a panel discussion
"Our Heritage and New Horizons"—Anna DePlanter Bowes, Former Director, Division of Nutrition, Pennsylvania Department of Health

The February meeting of the *Philadelphia Dietetic Association* featured a talk on the history of cook books from early Roman times to the present by Jean Hopper, Head, Business, Science, and Industry Department, Free Library of Philadelphia.

Association Activities

Continuing Education in Management. This is the last reminder that pre-registration is necessary for the A.D.A. Workshop in Management to be held in Pittsburgh, July 11 to 15. Further information may be obtained from A.D.A Headquarters. (See May issue, "Association Activities.")

Dietetics as a Profession. *Dietetics as a Profession*, with new format and rewritten text, is now available from A.D.A Headquarters:

Cramores
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The refresher drink for breakfast, break time, anytime

Full-flavored RAVE, the new zestful pick-up drink, contains more vitamin "C" than an equal serving of fresh orange juice. Enriched with vitamins "C" and "A", RAVE supplies more than 100% of the average minimum adult daily requirement of vitamin "C". Serve refreshing RAVE — just add water.

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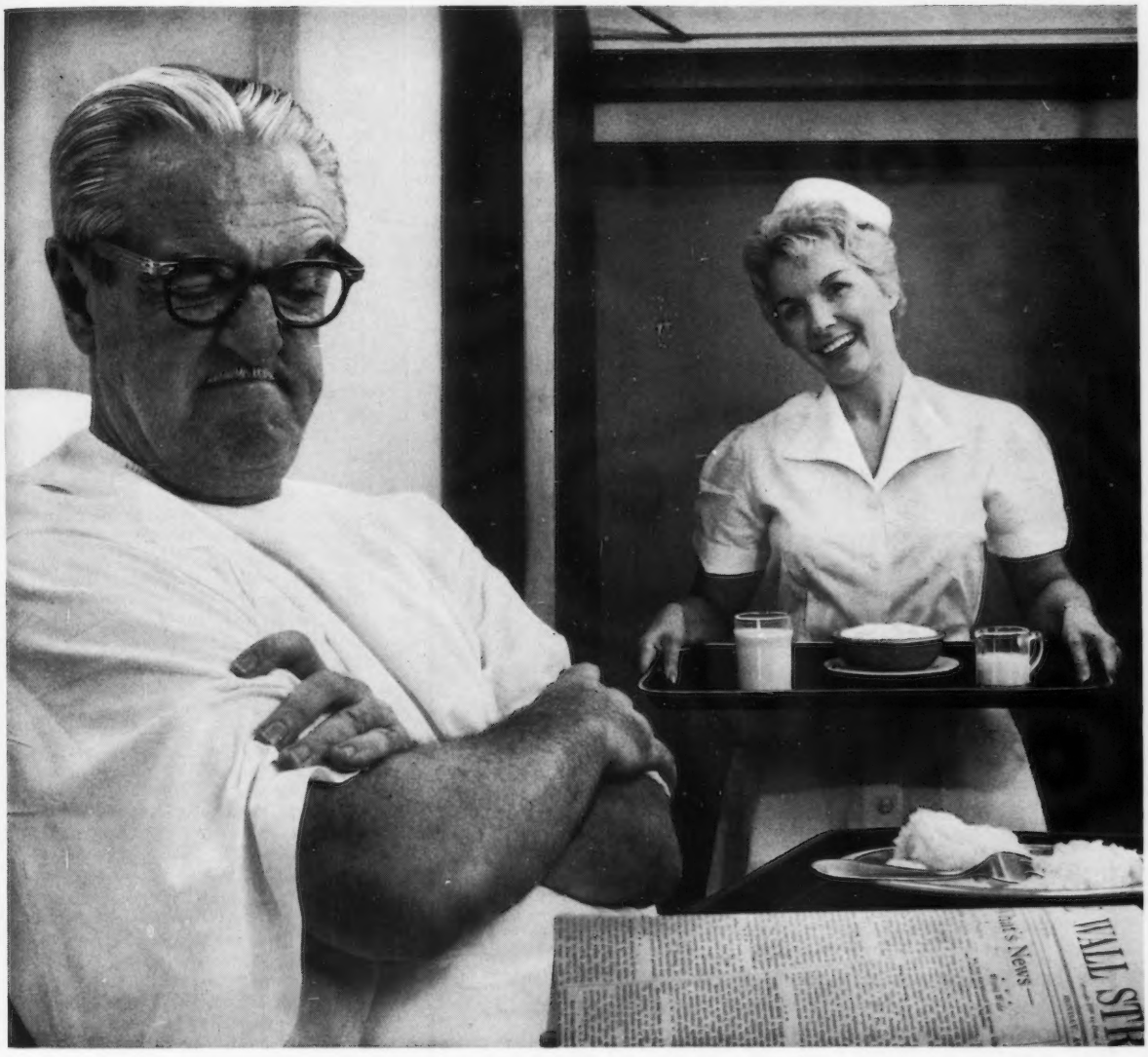

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serve him double-flavored Malt-o-Meal

Here's a man used to getting exactly what he wants. Bland diet? Let's face it . . . he hates it. So give him something bland but full of flavor—*double-flavored* Malt-o-Meal. Sun-ripened wheat and toasted malt. Never gummy—has good "mouth feel." It's just what the doctor ordered for bland diets, geriatric patients, and baby. And it's just good eating.

REMEMBER THIS ABOUT MALT-O-MEAL

- No sodium added. Natural content 3 mg. per 100 gms.
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- Easily digestible.
- Fortified with B complex vitamins and iron.
- Low fat—no cholesterol.
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- Added wheat gluten gives higher protein content.

When ordering cereal . . . order Malt-o-Meal enriched wheat cereal

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1 copy	$ 0.35
25 copies	7.75
50 copies	14.00

Vocational counselors, teachers, and librarians may request a complimentary copy. A.D.A. members can perform an important service by making a copy available to interested persons.

"View from the Mountain." Modern Talking Picture Service reported 3,491 showings to an audience of 141,165 as of March 31. This does not include the showing of the prints owned by local and state dietetic associations; these figures will be reflected in the Public Relations and Career Guidance Annual Reports to be circulated in August.

Conference on Aging. Nelda Ross Larsson will be the A.D.A. representative attending the University of Michigan 13th Annual Conference on Aging in Ann Arbor, June 27 to 29.

History of The American Dietetic Association. Each A.D.A. member will want to own a copy of the *History of The American Dietetic Association*, available from J. B. Lippincott, East Washington Square, Philadelphia 5, for $6. The history traces the first forty years of A.D.A. and contains many interesting highlights.

Presidential Inauguration. Ruth Buckley represented A.D.A. at the inauguration of Dr. Andrew David Holt, sixteenth president of the University of Tennessee, Knoxville, May 14.

Lulu G. Graves Memorial Library. The A.D.A. Loan Library, dedicated in memory of Lulu G. Graves, first President of The American Dietetic Association, is celebrating its tenth year. Progress has been accomplished. Approximately a thousand books have been acquired; catalogued according to author, subject, and title under the Dewey decimal system; and stored in enclosed bookcases. Although books may not be circulated, members are invited to make use of them at A.D.A. Headquarters.

A.D.A. subscribes to fifty-one periodicals. Thirty-six journals are exchanged; twenty-four published in the U. S. and twelve in foreign countries. For handy reference, current periodicals are shelved for one year. The Library Committee then reviews each issue for articles of value which are "clipped" and classified for the vertical files. Classification of this material is filed under these headings: Community Nutrition—7 subdivisions; Diet Therapy—51 topics in 4 sub-headings; Education—25 subdivisions; Food Administration—63 subdivisions; Miscellaneous—27 topics in 2 sub-headings.

Diet manuals have been in great demand. Members have assisted in developing this loan service by sending their new manuals and teaching guides. We also appreciate receiving other materials concerning workshops, institutes, and floor plans. Such material is loaned for three weeks at no charge, except return postage.

Many individuals have contributed to the successful development of the Lulu G. Graves Memorial Loan Library. Especially appreciated is the work accomplished under the Chairmanship of Elizabeth H. Tuft (1950-57); Nancylee Ray Gavazzi (1957-59); and the present Chairman, Julie Kramper. Acknowledgment is also given to Margaret L. Ross, Ph.D., Mary Ellen Johnson, Dorothy Bates, and Clara Zempel, members who cooperated as Headquarters staff members.

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NEW! THE LOW-SODIUM/ FAT-CONTROLLED COOKBOOK

Tells how to prepare tasty meals and apply seasoning for diets low in saturated fats and sodium

Today, the patient on a low-sodium or a fat-controlled diet must face the prospect of eating bland food.

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Also covered: use of herbs and seasoning in foods—including fresh lemon juice as a salt substitute for meats, vegetables, soups and juices and for adding the fresh taste, especially to canned and frozen foods.

Included are important tables that list calories, milligrams of sodium and grams of saturated and total fat in most foods.

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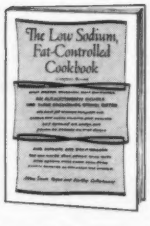

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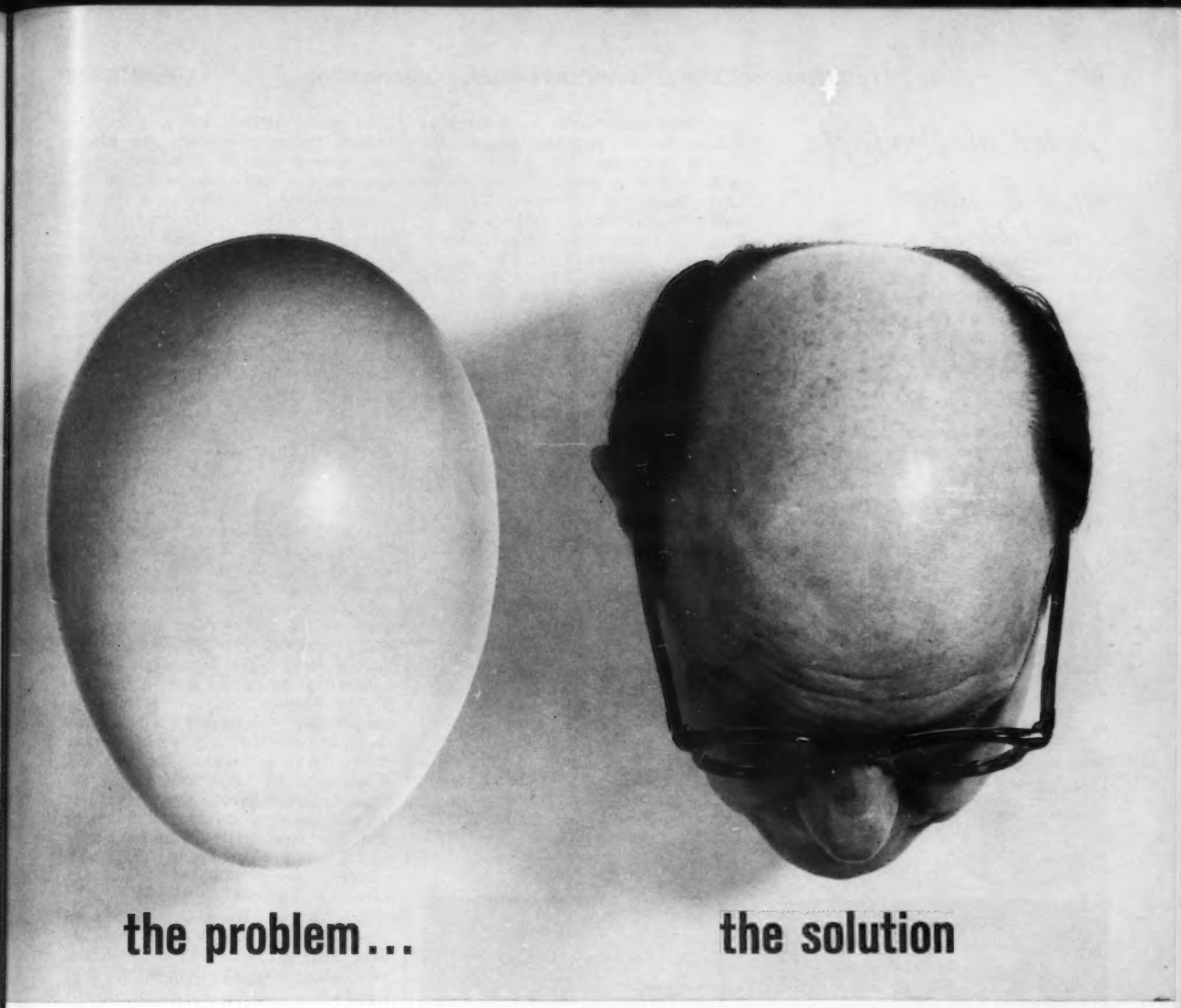
Obituaries

Madeline A. Miller. Word has been received of the death of Madeline A. Miller on March 5. Miss Miller, who had been a member of the Association since 1954, had served on the dietary staff of the VA Hospital, Buffalo.

Florence Walker. The A.D.A. office has been notified of the death on March 25 of Florence Walker. Miss Walker, who had been on the staff of Deaconess Hospital, Buffalo, for a number of years, had been an associate member of A.D.A. since 1930.



the problem... **the solution**

In an unrelenting research program that overlooks *nothing,* Economics Laboratory made the unsuspected discovery that egg and other protein-type soils were sabotaging the dishwashing operation . . . because they produce disabling foam which reduces wash pressure.

Pursuing this significant revelation, it followed that Economics Laboratory scientists formulated Score* and Event*—the *only* two new and radically different detergents that can step up your dishmachine efficiency by as much as *double* . . . by reducing foam.

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News of Products and Services

Thirty models of *AMF Lowerator* self-leveling dispensers are pictured and described in a handy, accordion-fold catalog issued by *Lowerator Division, American Machine & Foundry Company.* Operating principles of these dispensers are described in connection with mobile and in-counter, heated, unheated, and refrigerated models.

A new Decor-Lowerator, mobile dispenser was displayed by the *Lowerator Division* at the National Restaurant Show last month in Chicago as well as mobile cup and saucer dispensers with the new Swirl-A-Heat System, and a new, cantilever-type Tray-plus-Silver Dispenser. The Decor-Lowerator features side panels of Formica or plastic laminate in decorator colors, patterns, and wood-paneling effects. The Tray - plus - Silver Dispenser combines automatic tray dispensing with silverware dispensing by adding an overshelf to a standard Lowerator tray dispenser.

"Swirl-A-Heat," a new cup-heating system, has been incorporated into all *AMF Lowerator* self-leveling cup dispensers. The system brings in cool air, which is passed through the preheating chamber by a multi-blade turbine wheel driven by a four-pole, shaded induction motor. The air is then forced over a 1200-watt, ring-type heater and distributed to the cup-dispensing chamber by a diffuser plate. Less space is required for the system because 25 per cent less power is used; thus a more compact unit is possible.

Maroon and gray are the keynote colors in *Syracuse China's* new Embassy pattern. A narrow, restrained decorating band around the edge features a solid section in maroon with a scroll design in soft gray. The decoration is applied under a steel-hard glaze, so that it will not fade or wash off. The glaze itself is impervious to scratching with an ordinary table knife; thus sparkling appearance and sanitation is assured.

Sliding glass doors are features of both a new 45-cu. ft. refrigerator and a companion freezer with matching design, manufactured by *Nor-Lake, Inc.* The new models, R-45G refrigerator and 45XHG freezer, are especially adapted for self-service. The sliding glass doors facilitate selection before the doors are opened. An improved blower coil, or ice maker evaporator, highlights operational features of the refrigerator; the freezer has automatic hot gas defrosting. Both units have eight adjustable wire shelves. Other features include baked white enamel finish or stainless steel exterior, hermetically sealed compressors, and removable louvered panel situated below the keyed locking doors.

The *National Dairy Council* has revised four of its popular publications designed for use by obstetricians and pediatricians. They are: "What to Eat Before You Are Pregnant—While You Are Pregnant—After the Baby Comes"; "Feeding Your Baby at Your Breast"; "When Your Baby Is Bottle Fed"; and "Feeding Your Baby During His First Year." The four booklets were written by Dorothy V. Whipple, M.D., pediatrician in Washington, D. C., and Assistant Professor, Department of Pediatrics, Georgetown Medical School. Individual copies are available free; nominal prices are charged for quantity orders.

Heinz has announced the addition of five new instant cereals in its line of baby foods. They are: rice, oatmeal, and barley (contains no wheat or milk or their derivatives), as well as mixed and high protein cereals. All mix smoothly in just 5 seconds and will not lump or thicken on standing. All are enriched with iron, thiamine, and niacin, and the Heinz Rice Cereal is further enriched with riboflavin. All are fortified with calcium and phosphorus.

Dill Sauce is the newest product offered by *Louis Milani Foods, Inc.* It is characterized as "the perfect seasoning for fish and seafoods, as well as cole slaw." The company claims that when fish and seafoods are brushed or dipped in Dill Sauce before cooking, the original flavor which may have

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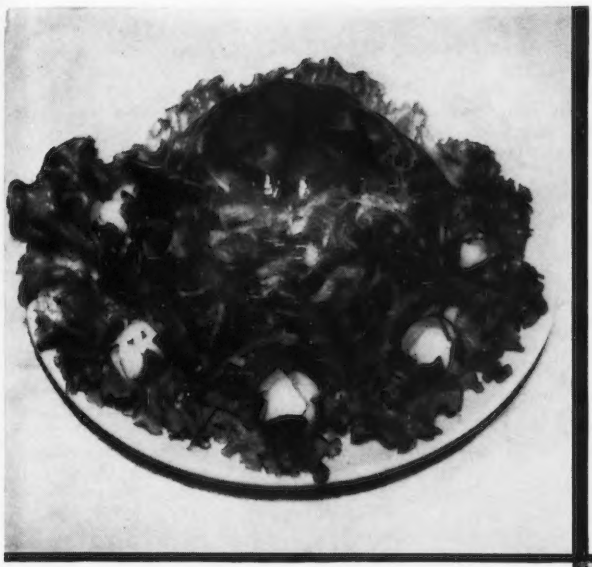
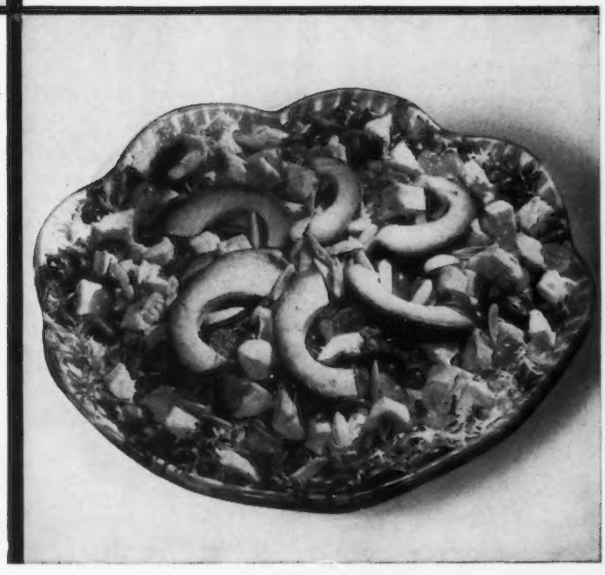


these *Cool* dishes are top-notch summer items!



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been lost during storage is rejuvenated. The company has prepared recipe suggestions for using Dill Sauce which are available on request.

For the institutional trade, *National Biscuit Company* is now producing a 25-lb. bag of Graham cracker crumbs. The product is packed in a multi-wall, polyethylene-lined bag for maximum protection. Over sixty Graham-crumb pies may be made from the 25-lb. bag.

The Hall China Company has introduced its new "Hold Heat" pancake service, consisting of three items, each available in various sizes, for individual serving of hotcakes, melted butter, and hot sirup. For pancake service, a round dish with fluted lips is offered in four sizes to accommodate 3½-in., 4¼-in., 5-in., and 5½-in. pancakes. For melted butter, miniature bottle-shaped services are available in three sizes: 1 oz., 1½ oz., and 2½ oz. For hot sirup, the server is obtainable in 3½-oz. and 4¼-oz. sizes. Exterior surfaces of the "Hold Heat" line are warm brown to enhance the golden color of hotcakes, while the inside is white. The body is heavy, crazeproof Hall china.

Toledo Kitchen Machines, Division of Toledo Scale Corporation has announced a new line of rackless conveyor dishwashers with exclusive "Add-a-Tank" design. Essentially, the new dishwashers are combinations of "Add-a-Tank" units necessary to achieve desired capacities, proper lengths, and other specific requirements. An electric water level control automatically fills and maintains the desired water level in all tanks during the washing cycle. Another feature is an electrical final rinse control that operates only when dishes are in the final rinse area, thus reducing the volume of rinse water and rinse agent used. The Toledo rackless dishwashers with "Add-a-Tank" design are offered in sixteen basic model variations, with lengths up to 20 ft. and capacities ranging from 4,000 to 10,000 dishes per hour. The rackless design assures protection of the original investment, since "Add-a-Tank" units may be added at any time to meet new requirements.

S. Blickman, Inc. has a new, all Sealwelded, non-jacketed coffee urn and a handsomely designed ice tea urn made of Pyrex glass and stainless steel, both of which were unveiled for first showing at the National Restaurant Show last month in Chicago.

Insinger Machine Company's new, double-tank automatic conveyor dishwashing machine—the Speeder IV—features all-welded cover and radius hood construction, with deep-drawn, cove-cornered, seamless, one-piece, 14-gauge tanks. Self-draining brackets and cornerless design eliminates "bacteria corners." This machine will service up to six hundred diners per meal.

"Turkey Fact Book," available from the *Poultry and Egg National Board,* contains a wealth of data on turkeys, including: new developments in the marketing of turkey meat, the importance and nutritive value of turkey meat in the diet, interesting and factual historical facts about turkeys and the turkey industry, as well as statistics on turkey production and consumption, and a table on the "Work Time Required to Buy a Pound of Turkey, 1920-1958."

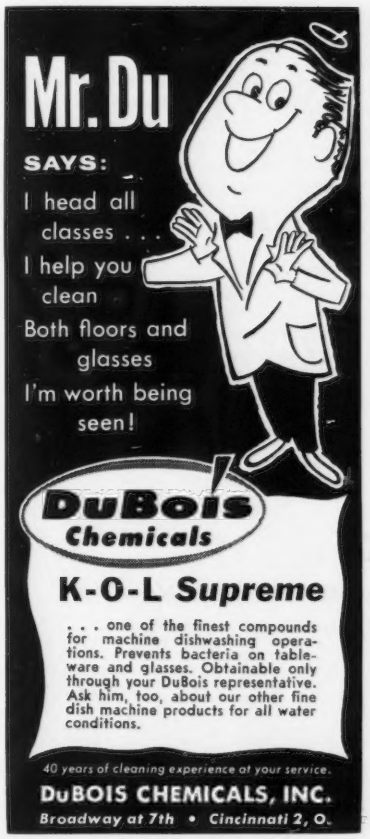
A new refrigerator (Model VS-74-S) from *Victory Metal Manufacturing Corporation,* features interchangeable interiors that can be changed as needs change. Pull-out or stationary shelves, adjustable-type pan slides, pull-out or stationary meat rails, pull-out or fractional pan supports and ball bearing drawers are available for greater versatility in usage. Twenty-five per cent more insulation is incorporated in the construction so that cold temperature may be maintained with reduced electrical consumption.

A heavy-duty spaghetti strainer is a new addition in the *Harlow C. Stahl Company's* line of aluminum cookware for restaurants, hotels, and institutions. Made of heavy-gauge aluminum, it is abrasion- and corrosion-resistant. A sanitary open bead and rounded corners are designed for easy cleaning. A malleable aluminum handle remains cool to facilitate handling. The new strainer has a 5-qt. capacity.

September 26 to 28 will be the dates of the 12th annual *Pillsbury* Bake-Off, to be held this year in Washington, D. C. Applications may be entered by contestants up to June 30. Copies of the recipe booklet containing recipes of the 1958 winners in the Grand National Recipes and Baking Contest are now available from the company for 25 cents each.

Three new recipe collections have recently been released by *Campbell Soup Company.* A packet of twenty-four cards features "classic" recipes in institutional quantities, using 50-oz. size cans of condensed soups, as well as several new recipes. Another series of "Quantity Recipes for Preparing Soups and Main Dishes" was developed for the use of homemakers who become involved in planning and purchasing food for groups of ten, twenty, and fifty. These recipes are based on the 10½-oz., No. 1 home-size can, which is familiar to such women. "A Roundup of Menus & Recipes for Girl Scout Occasions" completes the trio of new booklets. It features recipes with condensed soups used at the Girl Scout Roundup last summer. All are "sized" for groups of nine, the average troop size.

Foster Refrigerator Corporation introduced two innovations in refrigeration equipment at the National Restaurant Show in Chicago in May. The first is a new style, welded, all-aluminum corner refrigerator with pull-out shelf, which is designed to utilize lost corner areas. The second is a floor-track convertible refrigerator with a self-guiding, self-adjusting wheel guide which automatically positions the wheels, adjusts individ-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ually for uneven floors, and has a self-sealing wiper to minimize refrigeration loss.

Caddy Corporation of America will ship all of its dish Caddys after July 1 with interior vertical and horizontal intersections rounded with coved corners. The rounded designs will improve sanitary effectiveness, facilitating cleaning and handling of dishes. A new, four-page catalog sheet, "Versatility in the Caddy Line" is available which describes the firm's equipment to handle dishes, glasses, and trays.

Caddy has also designed new molded plastic trays for cups and glasses which nest and stack to eliminate chipping, scratching, and breakage, since cups or glasses are held individually and solidly away from each other, without danger of slipping during storing and carrying. Air spaces are provided around lips to permit quick air drying. The trays may be washed in automatic dishwashers.

A 5-lb. bag of instant whipped potatoes is now available from *Gateway Flakes, Inc.* Each foil-lined bag, packed six to the case, will produce 3½ gal. whipped potatoes or 160 3-oz. servings. Gateway Farms used the process developed by the USDA which produces ultra-thin potato flakes.

Precision Metal Products, Inc. is marketing a new line of all-aluminum open utility racks. Constructed of 1-in. square aluminum tubing frames and extruded aluminum tray runners, there are twelve models in the line, which will accommodate tray sizes used in nearly all food service operations. They are particularly useful in transporting baked foods from the oven, for freezer room use, and as bussing carts. They may also be used for receiving, general storage, and display purposes, as well as in food preparation areas. The racks will be packaged and shipped disassembled, thus saving freight charges for customers. Simply by positioning the cross supports and securing eight bolts supplied by the factory, the units are easily assembled in less than 10 min.

New electric bake ovens, pizza ovens, and roast ovens, designed to be stacked in combination have been introduced by *Bakers Pride Oven Co., Inc.* The bake ovens are available in one-, two-, three-, or four-stack models. All units are equipped with steam injection nozzles for baking rolls and bread. Raw frozen food products may be taken directly from the freezer without thawing. The oven holds two 20 by 30 in. baking pans or twelve 10-in. fruit pies on each deck. Pizza ovens are also available in one-, two-, three-, or four-stack models for volume baking at high temperature. Two 20 by 30 in. pizza pans or twelve 10-in. pizzas can be accommodated on each transite deck. Roast ovens are available in one-, two-, or three-stack models holding two 20 by 30 in. roasting pans on each deck. All operate on 220 A.C., single or three phase.

Requiring only three-fourths the floor space needed for individual units, *Elliott-Williams Co., Inc.* is offering a space-saving cabinet with three separate units combined in a new reach-in, walk-in cooler-freezer. The front compartment, refrigerated to 35° F., is a conventional reach-in, walk-in combination refrigerator reached through a flush walk-in door and three reach-in doors. Large volume walk-in storage is provided for bulk goods; smaller items may be stored on three aluminum shelves convenient to the reach-in doors. A walk-in freezer compartment for bulk storage of frozen foods is reached through the refrigerator section. Unlimited size combinations are offered. The exterior is finished in aluminum alloy, porcelainoid enamel, or stainless steel.

Bloomfield Industries, Inc., has introduced a new line of sectional pans made of extra-heavy gauge stainless steel with tapered sides for easy nesting and minimum storage requirements. The new pans are available with flat and dome-type covers and are packaged in sealed polyethylene bags.

Designed to transport heavy loads of stacked dishes, "China Clipper" carts from *Bloomfield* are manufactured in two sizes. No. 624 has shelf dimensions of 16 by 27¾ in., and No. 625 measures 21 by 36¾ in. Optional adjustable dividers and a slanted shelf keep dishes racked in straight, clatter-proof lines. A flat, bottom shelf may

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be used for stacking trays. A hinged cover for extra sanitation is provided. The carts are available in stainless steel or heavy duty hammerloid enamel finish.

Another new cart from *Bloomfield*, No. 616, has extra shelf capacity. With six shelves, each measuring 21 by 35 in., the cart is only 50 in. high to permit passing through standard door openings easily. The unit has a capacity of 500 lb., is made of stainless steel, and has rubber-tired casters.

A push-in box with one or more cold and hot sections for food on racks is offered by *The C. Schmidt Company*. Each box is stainless steel inside and out and will accommodate twenty-one trays. Any combination of hot or cold sections is available in two, three, or four units. The condenser for refrigerated sections may be top mounted or remote.

Silite, Inc., announces a new plastic tray designed to hold twenty glasses without chipping or breaking. The ridge and groove construction allows air to circulate between glasses so that they may be air dried while stored. The Stak-A-Glas trays stack safely one on top of another; they may be washed in dishwashers and are resistant to mild acids, alkalis, and staining. Stak-A-Cup trays are available, also.

A new product, "Dip-Away," for cleaning stainless steel has been introduced by *Elgert Chemical Products Corp.* No scrubbing or polishing is necessary. The stainless steel utensils are dipped into the solution and then rinsed. The product contains no acid or chlorine and is non-toxic, nonflammable, and has no "after odor." Extensive tests by leading hotels in southern California resulted in cutting man-hours 90 per cent.

A new rack for washing, carrying, and storing cups made of durable high density polyethylene for savings in weight, space, and cost is offered by *Raburn Products, Inc.* The "Cup-saver" rack is designed to hold 18 cups. It has handgrips and may be used on conventional 20-in. push-through conveyor and peg-type dishwashers, or with 20 by 20 in. self-leveling dispensers and dish tables. The rack weighs 35 oz. and nests for space saving. The plastic is unaffected by boiling water and detergents and resists breakage, even in dropping.

Paper Cup and Container Institute, Inc. is offering a sixty-page, illustrated manual, "The Manual of Paper Food Service," to quantity food service operators. It summarizes proven ideas and techniques gathered from food service operations throughout the country. Nine chapters are devoted to costs, kitchen planning, portion control and preportioning, water service, take-out, packaging, electronic cooking, freezing, and the storage and disposal of paper. Of particular interest is the chapter on the cost of paper service, with a detailed cost accounting procedure which any operator may use for calculation and comparison. In the remaining four chapters, specific situations and problem solutions are discussed for hospitals, industrial feeding, restaurants, and school lunch programs.

A unique, metal-tip spout permanently attached to heavy, fireproof china pots is featured by *The Hall China Company*. It is claimed the metal tip spout protects pot and tablecloth, effecting substantial savings in china replacement and laundry. At present, two pots are available—MTS-#40 for hot water, coffee, and chocolate service; and MTS-#10 for hot water and tea service. Pots have 1½-cup capacity for individual service and are designed in twenty-six underglaze colors.

A mobile "cafeteria on wheels" is offered by *W. H. Frick, Inc.* The entire serving line plus all under-counter units move into place, even the counter for the cashier-checker. Food service operators are thus able to change serving patterns, meet temporary or long-range needs, take advantage of seasonal foods, or make efficient use of space and labor. Units are available for hot or chilled foods, baked goods, beverages, and dispensing cups and saucers, and dishes. Components interlock to form a system or they may be purchased separately. All have stainless steel exterior; the interior may be sanitized.

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THE UNIVERSITY OF MICHIGAN
JUN 1 1960
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Journal

of The AMERICAN DIETETIC ASSOCIATION

JUNE 1960 VOLUME 36 NUMBER 6

Creative Thinking
James B. Boulden

From Relegation to Delegation
Milton Gordon

Translating You to Television
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New and Improving Food Products
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Prepared Frozen Foods
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Cross Charts in Planning Layouts
R. Gottlieb and M. A. Couch

42nd A.D.A. Annual Meeting
Cleveland—October 18 to 21, 1960

Low calorie gourmet dining with Sara Hervey Watts

Duck À L'Orange at New York's "21"

Crêpes Suzette at the Maisonette in Cincinnati

Mousse Au Chocolat at Sardi's

Cherries Flambé at the Fabulous Pump Room

Strawberry Cheesecake at Philadelphia's Old Original Bookbinder's

Pear Chutney at Chicago's Saddle & Sirloin Club

Pèches De Menthe at the Fleur De Lis in Milwaukee

. . . now sweetened with Sucaryl

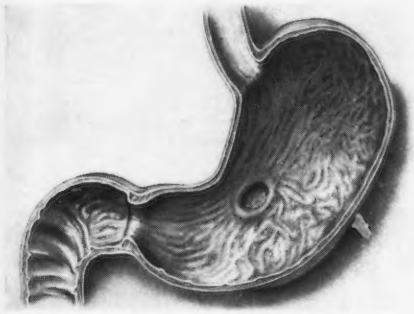
Today weight watching epicures can enjoy the *haute cuisine* of the world's finest restaurants, significantly reduced in calories. And Gourmet Chefs are proud to offer their specialties sweetened with Sucaryl . . . it adds no calories and you can't taste the difference!

FREE! . . . Gourmet Recipes From The World's Great Restaurants!

All the Sucaryl-sweetened specialties enjoyed by Sara Hervey Watts on her tour of famous restaurants. Simple, easy-to-follow. Write ABBOTT LABORATORIES, North Chicago, Illinois, for free copy, plus free Sucaryl Samples.

®Sucaryl—Abbott's Non-Caloric Sweetener

When ordinary food must be supplemented



ULCERS and other restricted diets, as in liver diseases and gall bladder conditions.

Patients

POST-OPERATIVE and other nutritionally depleted patients, such as geriatrics, prolonged convalescence, and chronic illnesses.

like

TOTAL FEEDING, whether by tube or orally, in conditions such as wired jaws and cancer of the oral cavity.

Meritene

The good-tasting protein-vitamin mineral supplement

Have you tasted Meritene?

ANALYSIS PER 100 GRAMS:
365 calories; 33 gm. protein (nonfat dry milk); 0.2 gm. fat; 58.4 gm. carbohydrate; 15 mg. iron; 1 gm. calcium; 7000 IU vit. A; 2.4 mg. thiamin; 4.3 mg. riboflavin; 22 mg. niacin; 80 mg. ascorbic acid; 550 IU vit. D.

MAIL COUPON FOR ONE LB. CAN

THE DIETENE COMPANY MD-60
Highway 100 at W. 23rd St.
Minneapolis 16, Minnesota

FREE

Please send me *free* a 1-lb. can (regular $1.98 retail size) of Meritene protein-vitamin-mineral supplement.

Name_____

Address_____

City_____ Zone____ State_____

why not re-evaluate PORK

in the light of today's scientific findings–

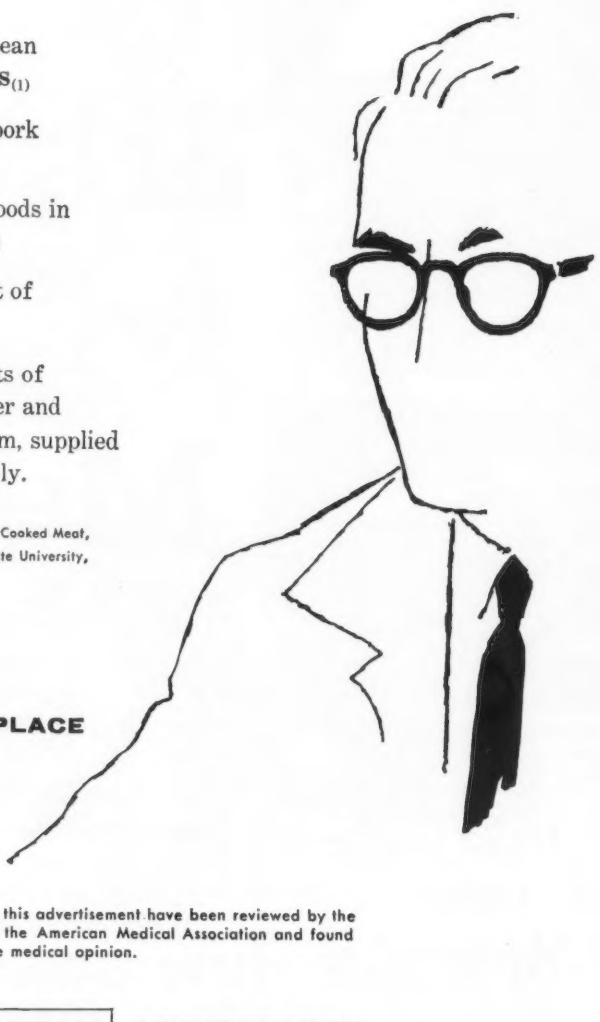
—the average serving of 100 gm. of lean pork provides a **modest** 250 **calories**(1)

—compare the **fat-content** of lean pork with that of other lean meats.

—pork outranks other high-protein foods in its **contribution of thiamine** (B_1)

—pork provides an important amount of **other B vitamins**

—pork contributes significant amounts of the **essential minerals,** iron, copper and phosphorus, magnesium and potassium, supplied in a form that the body can use readily.



1. Leverton, R. M., and Odell, G. V.: The Nutritive Value of Cooked Meat, Oklahoma Agricultural Experiment Station, Oklahoma State University, Miscellaneous Publication MP-49, 1958.

PUT PORK IN ITS PROPER PLACE

. . . in the daily diet

. . . use to tempt jaded appetites

The nutritional statements made in this advertisement have been reviewed by the Council on Foods and Nutrition of the American Medical Association and found consistent with current authoritative medical opinion.

AMERICAN MEAT INSTITUTE

MAIN OFFICE, CHICAGO • MEMBERS THROUGHOUT THE NATION

PROTEIN

essential for growth and development

With other nutrients, protein affects the differentiation of cells during development . . . participates in all metabolic processes which result in growth . . . and is stored as the structural part of all of the soft tissues of the body.

In relation to body weight, requirement for protein . . . expressed as such or as essential amino acids and total nitrogen . . . is highest during infancy . . . slowly decreasing as rate of growth decreases until adult size is reached. During pregnancy and lactation, when growth is supported by maternal tissues . . . protein requirement again increases.

Assuming an ideal pattern of amino acids in dietary protein . . . the changing minimum requirement has been expressed by the Food and Nutrition Board in gms. of protein per kilogram of body weight as follows . . . 1.76 from birth to 3 months . . . 1.21 from 3 to 6 months . . . 0.95 from 6 to 9 months . . . 0.77 from 9 to 12 months . . . 0.54 from 1 to 6 years . . . 0.50 from 7 to 9 years . . . 0.44 from 10 to 12 years . . . 0.42 from 13 to 15 years . . . 0.35-0.36 for girls and boys 16 to 19 years . . . 0.44 during the second half of pregnancy . . . and 0.56 during lactation with 850 ml. of milk secreted daily.

Assigning a biological value of 79 to cow's milk, the requirements change respectively to . . . 2.23, 1.53, 1.20, 0.97, 0.68, 0.63, 0.56, 0.53, 0.44 to 0.46, 0.56 and 0.71 grams of cow's milk protein required per kilogram of body weight . . . from birth until 20 years of age . . . and during pregnancy and lactation.

As increasing amounts of high quality protein are fed to children, the amino acid pattern of the diet decreases in importance. As long as the biological value of the protein of a diet falls above 60, the amino acid pattern is not critical . . . for amino acid requirements can readily be satisfied if enough protein is eaten.

Milk is man's first dietary source of protein . . . providing the total protein needs during the first months of life. One quart of milk daily can provide the pre-school child up to 85 percent of his protein allowance . . . and the teen-age youth one-third to one-half of his protein allowance.

The nutritional statements made in this advertisement have been reviewed by the Council on Foods and Nutrition of the American Medical Association and found consistent with current authoritative medical opinion.

Since 1915...promoting better health through nutrition research and education

NATIONAL DAIRY COUNCIL

A non-profit organization

111 NORTH CANAL STREET · CHICAGO 6, ILLINOIS

THIS ADVERTISEMENT IS ONE OF A SERIES. REPRINTS ARE AVAILABLE UPON REQUEST

Recent JAMA editorial statement clarifies the current controversy about dietary fats

Excerpted from the March 12, 1960, issue of The Journal of The American Medical Association:

"It is accepted generally that specific alteration in the diet will lower the concentration of cholesterol in the blood. The most effective results to date have been achieved by increasing consumption of polyunsaturated fatty acids, particularly linoleic acid. However, indefinitive and conflicting information has left much to the imagination of some food processors. Some of the largest vegetable oil processors in the United States have implied in advertisements that the cholesterol level can be lowered merely by adding polyunsaturated fatty acids to the diet. This selling campaign has created confusion among lay people, making it increasingly important that the physician clarify for his patients the conditions under which changes in the diet will be effective.

The patient should understand that if he increases his consumption of polyunsaturated fatty acids without reducing his intake of other fats, little is gained save for additional calories which could lead to obesity. A particular regimen will be effective only if polyunsaturated fatty acids are responsible for an appreciable percentage of the total fat calories. That is, they must replace rather than supplement some of the saturated fats and oils already in the diet.

* * *

Some manufacturers cite the "iodine number" of a fat or oil as evidence of the unsaturated fatty acid content of their product. This number is not a reliable indicator of therapeutic value because it measures monounsaturated and polyunsaturated fatty-acid content at the same time. A monounsaturated acid, like oleic, takes up two iodine atoms but does not affect the cholesterol concentration of the blood. A polyunsaturated acid, like linoleic, takes up four iodine atoms. In a product containing large amounts of oleic acid and small amounts of linoleic acid, the iodine number is nearly the same as it would be for a product containing little oleic acid and a modest amount of linoleic acid. Cottonseed oil has an iodine number of 110 and corn oil a number of 127; yet they each have about the same amount of linoleic acid.

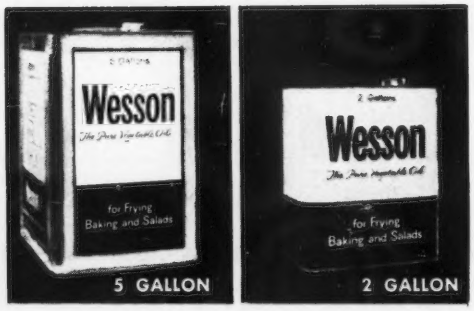
* * *

Low-fat diets will not reduce the concentration of circulating cholesterol and lipoproteins as effectively as will diets containing an adequate percentage of polyunsaturated fatty acids. Weight-reduction regimens are basically low in fat, and if a lowered cholesterol level is necessary, planning must be done to maintain the proper ratio of saturated to unsaturated fats."

* * *

Herbert Pollack, M.D.
Associate Professor of Clinical Medicine
Postgraduate Medical School
New York University, New York

Where a vegetable (salad) oil is medically recommended for a cholesterol depressant regi Wesson



The same fine oil is in all consumer sizes and the institutional two- and five-gallon cans.

Lean Beef Tips Veronique an example of glorious eating from Wesson

Wesson is unsurpassed by any readily available brand

WESSON'S IMPORTANT CONSTITUENTS

Wesson is 100% cottonseed oil–winterized and of selected quality

Linoleic acid glycerides (poly-unsaturated)	50-55%
Oleic acid glycerides (mono-unsaturated)	16-20%
Total unsaturated	70-75%
Palmitic, stearic and myristic glycerides (saturated)	25-30%
Phytosterol (predominantly beta sitosterol)	0.3-0.5%
Total tocopherols	0.09-0.12%

Never hydrogenated—completely salt free

Each pint of Wesson contains 437-524 Int. Units of Vitamin E

FREE Wesson recipes, available in quantity for your patients, show how to prepare meats, seafoods, vegetables, salads and desserts with poly-unsaturated vegetable oil. Request quantity needed from The Wesson People, Dept. N, 210 Baronne St., New Orleans 12, La.

A system built with LOWERATOR dispensers...

Answer to volume dish handling problems

To get maximum efficiency, dish handling problems are solved with a coordinated plan.

That's why the AMF Lowerator Self-Leveling Dispenser System can be so important to the efficiency of *your* operation. From Lowerator's complete range of mobile, in-counter, heated and refrigerated models, a complete dish handling system is planned and tailored to your specific requirements. Here's what this system will do:

The Lowerator System cuts rehandling of dishes between washing and serving. It puts every dish at serving level... automatically. It ends slow-downs caused by inefficient dish handling. It eliminates "dead" dish inventories, stores planned quantities of dishes in minimum space. It stores them *in* the serving area, but *out* of sight. The AMF Lowerator System makes for good service.

Proved by 600,000 units in daily use

Today more than half-a-million Lowerator Dispensers are in constant use in all types of food service establishments. The AMF Lowerator System earned this universal acceptance because it is the efficient method of clean dish handling... every unit gives the ultimate in performance.

These important Lowerator features guarantee lasting satisfaction: Type 302 stainless steel springs and dispenser tubes in heavy gauge, seamless, heliarc-welded cabinets; positive, tamper-proof dispensing levels; U.L. and C.S.A.-approved heating systems and N.S.F. approval.

See your Food Service Equipment Dealer or write: LOWERATOR DIVISION, American Machine & Foundry Company, AMF Building, 261 Madison Avenue, New York 16, N. Y.

WASHING AND STORAGE

Dishes, glasses and trays are loaded into mobile Lowerator Dispensers directly from the dishwasher. They are not touched again until needed for serving. Elimination of rehandling reduces breakage, makes work easier and improves sanitation. With the Lowerator System, crowded dishwashing areas and "dead" dish inventories are problems of the past.

Simplify... speed... save with

TRAY ASSEMBLY

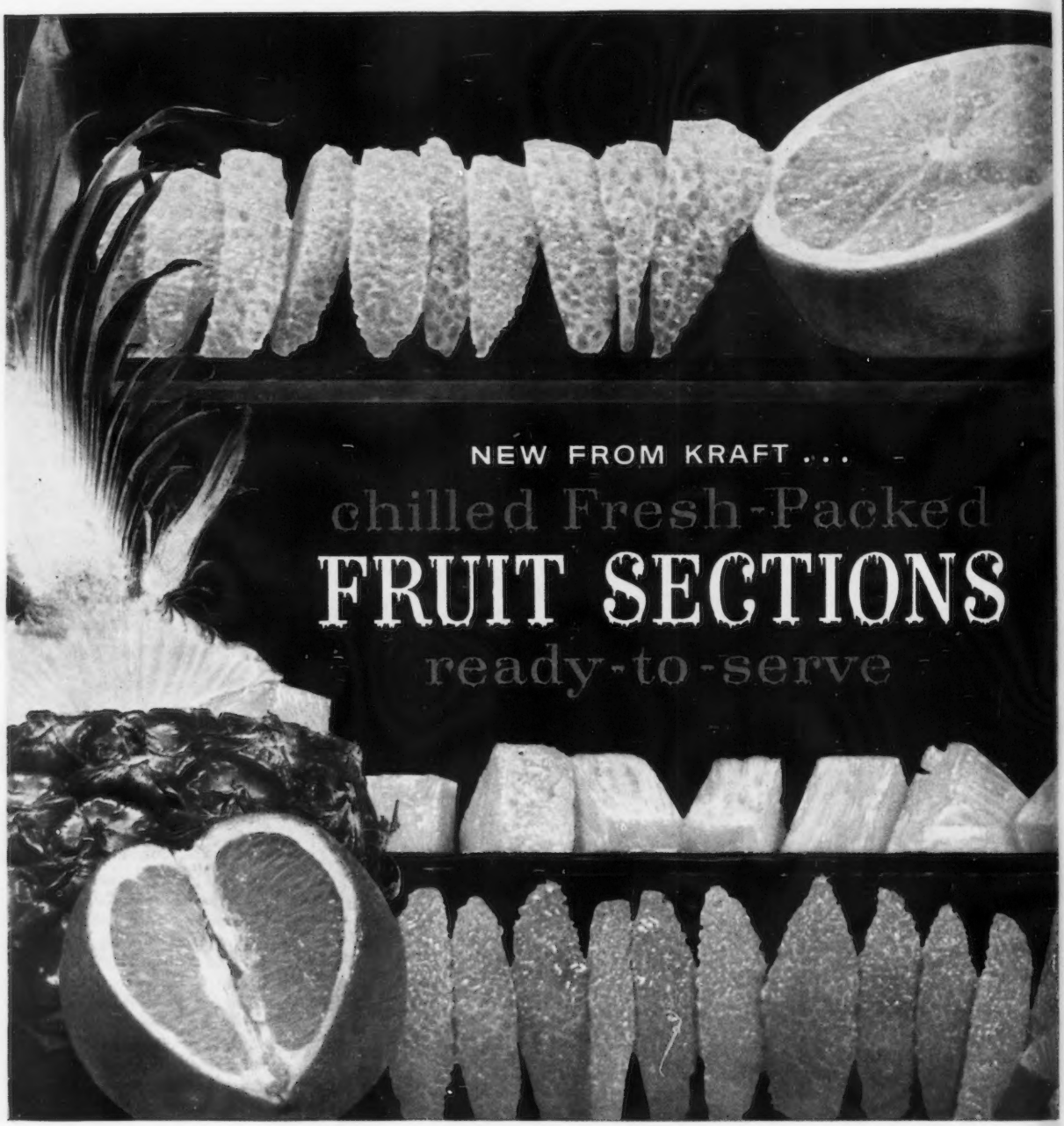
In this hospital tray assembly, Lowerator Dispensers position planned quantities of dishes so that the line moves at the required rate of speed. Both mobile and in-counter units are used effectively in this operation.

SERVING CUSTOMERS

In-counter Lowerator units at this cafeteria automatically lift dishes to convenient serving level. Diners obtained trays from a Lowerator Tray Dispenser without having to bend or stoop. The AMF Lowerator Dispenser System adds to the efficiency of practically every type of food service operation.

AMF LOWERATOR*

**LOWERATOR is a registered AMF trademark for the original, proven self-leveling dispenser.*



Juicy-ripe fancy fruit in ½-gal. jars • Chill-pack keeps fresh flavor • Saves you money

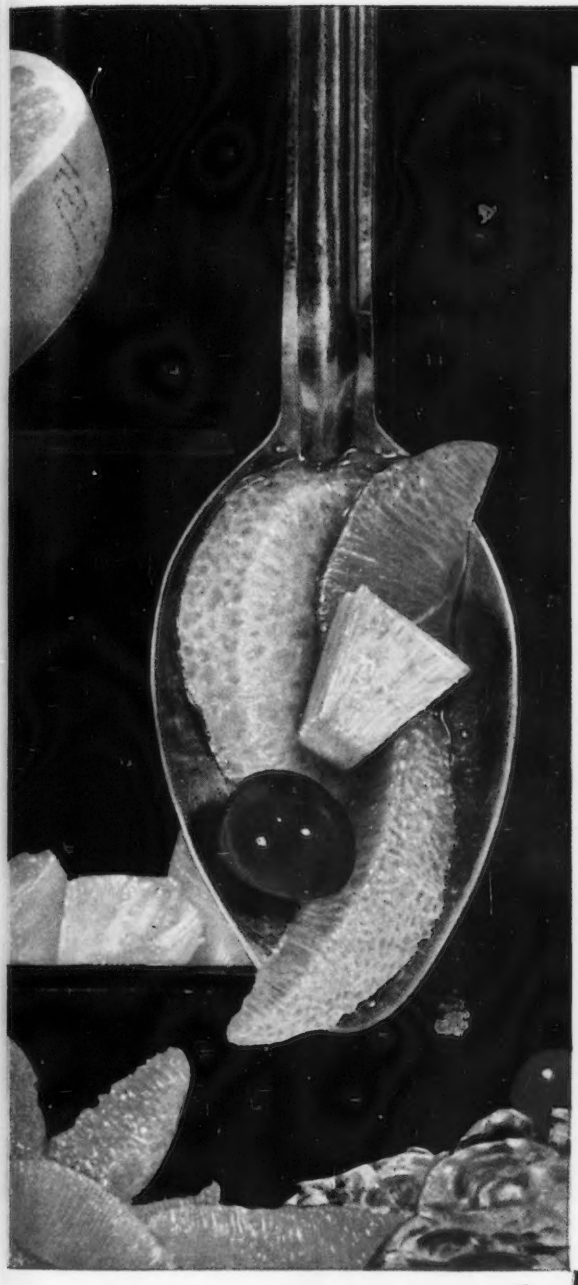
Now, right out of these jars from Kraft, you can make delicious fruit salads and desserts quicker, easier and more economically than before. Because Kraft brings you grove-fresh fruit straight from the citrus heartland of Florida.

Tree-ripened oranges and grapefruit are peeled and sectioned at Kraft's modern plant in Lakeland. Choice pineapple is field-ripened in Cuba, diced, blast-chilled and flown to Florida.

Care in handling and speed assure peak quality. Within 45 minutes of peeling, fruit is jar-packed and cooled. Refrigerated trucks rush it to Kraft warehouses . . . and to you.

You get big juicy sections. And you save time and labor! No fruit to peel and section. No spoilage. No waste . . . No seasonal fluctuations in quality and price. All year round you get fine, firm fruit to the bottom of each jar!

KRAFT . . . FOR GOOD FOOD AND GOOD FOOD IDEAS



KRAFT GRAPEFRUIT SECTIONS

KRAFT ORANGE SECTIONS

KRAFT PINEAPPLE CHUNKS

KRAFT FRUIT SALAD

Packed 4 Ways—*Orange or Grapefruit Sections, Pineapple Chunks, and Fruit Salad—in wide-mouth ½-gallon jars.*

INTRODUCTORY SPECIAL OFFER

$1.00

This coupon is worth $1.00 on the purchase of one case (6—½-gal. jars) of Kraft Fruit Sections.

Redeem through your Kraft Salesman or Distributor.

(Coupon void if use is prohibited, restricted or taxed. Offer expires July 30, 1960. Limit one coupon per case. Cash value 1/20 cent.)

KRAFT FOODS, Dept. AD, 500 Peshtigo Court, Chicago 90
Division of National Dairy Products Corp.

"We do all our frying with top efficiency, top results

says EMIL WINDMILLER, *Proprietor,*
Emil's Steer Inn, Columbus, Ohio

PURE, ALL-VEGETABLE **FRYMAX**

- Pours freely . . . brings astounding convenience!
- Gives top-quality results . . . better appearance . . . better taste!
- Provides outstanding economy . . . the hand-size 5-quart cans are easy to handle, save time, save work!
- Contains the remarkable protective ingredient, METSIL . . . to provide l-o-n-g-e-r kettle life!

"THE FRYING FAT THAT POURS"

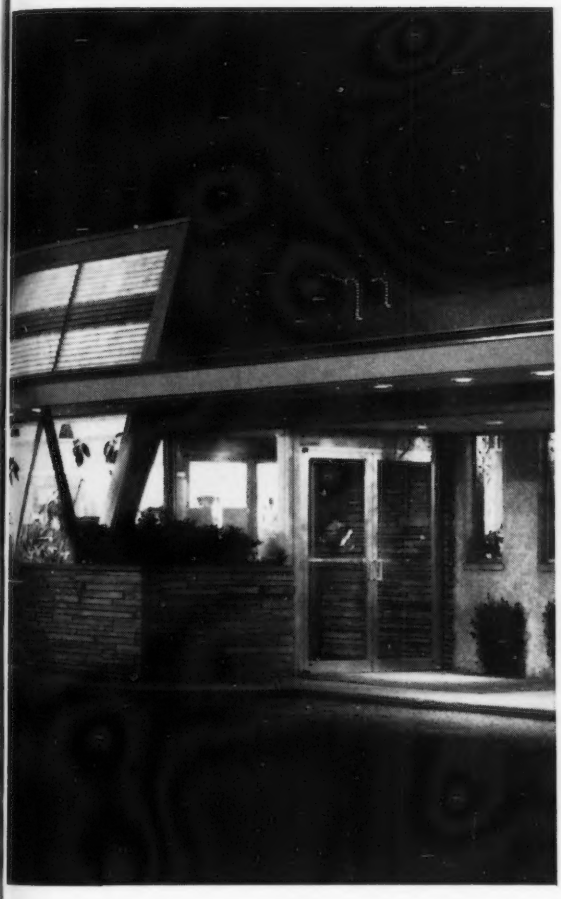
FRYMAX *FOR RESTAURANTS*

PROCTER & GAMBLE

. . . leader in quality products and service to the food industry. Makers of
FRYMAX • SELEX • PERTEX • PRIMEX • SWEETEX • GLODO • PURITAN OIL

FRYMAX and get all day long!"

"Our Inn is open around the clock. That means our fry kettles are kept busy for long hours turning out a wide range of fried foods. We have to use a frying fat that can stand up to this tough schedule and produce, without fail, the kind of quality foods that have built up our business. That's why we use FRYMAX. We find that we can depend on FRYMAX morning, noon and night for efficiency, economy and highest quality."



Emil's Steer Inn does the largest food business in Columbus. Shown above is the inviting exterior of the Inn. Emil's all-day service and "branded-for-quality" foods attract patrons from a wide area. Ample parking facilities and pleasing accommodations add to the attractiveness of this famous Inn. In addition to serving a wide variety of meals, Emil's also operates a thriving bakeshop on the same premises.

"FRYMAX starts working for us first thing in the morning . . . our breakfast patrons enjoy delicious corn fritters, French toast, French donuts, all fried in FRYMAX."

"In the same FRYMAX at lunch time we fry codfish cakes, veal cutlets, fillet of sole, French fries . . . and many other popular items."

"And in the evening we use the same kettles of FRYMAX to fry shrimp, cauliflower, chicken, scallops and other favorite fried items on our large dinner menu."

Only 2 or 3 of the freshly formed leaves from the tip of the twig are choice enough for export to Sexton

Either way you serve Sexton Tea

its extra quality comes through

From plantation to package, no importer controls the quality of its tea more strictly than Sexton. Our Luxury Darjeeling, for hot tea, is a uniquely delicate and satisfying blend. Sexton's special iced tea blend is full bodied in flavor, sparkling clear. Both will bring high praise to your menu.

Sexton

Quality Foods

JOHN SEXTON & CO., CHICAGO • LONG ISLAND CITY • BOSTON • PHILADELPHIA • PITTSBURGH • DETROIT • INDIANAPOLIS • ATLANTA • DALLAS • SAN FRANCISCO

SALAD DAYS ARE HERE AGAIN

—and so's this proven Jell-O favorite!

Tempting Low-Calorie Salad Luncheon

Jell-O gelatin makes this low-calorie salad (about 290) look so appealing, taste so good—and at *only* 17¢ per average serving!

GENERAL FOODS KITCHENS

Coolest way to perk up summer appetites!

Here's a glamorous low-calorie salad luncheon that's perfect for your summer menus! It's so low in calories, so appealing to the eye and tasty enough to wake up the most listless warm-weather appetites! (And, *your* side of the story: so easy to prepare, so low in cost!)

Make sure you use genuine Jell-O brand gelatin, though. Its high *"bloom strength"* means it stays firm longer—its "locked-in" flavor means it's always uniformly good. Your customers *know* about Jell-O flavor—that's why they've made Jell-O America's most famous gelatin brand.

JELL-O
CHIFFON
PIE
FILLING

JELL-O
PIE FILLING
and PUDDING

JELL-O
INSTANT
PIE FILLING
and PUDDING

GF INSTITUTIONAL PRODUCTS DIVISION

FREE! More good warm-weather Jell-O suggestions. Just write to: General Foods Kitchens, Dept. J, General Foods Corporation, White Plains, N. Y. FEATURE Jell-O salads and desserts on menus—a proven way to sell more.

GENERAL FOODS CORPORATION, INSTITUTIONAL PRODUCTS DIVISION, WHITE PLAINS, N.Y.

Jell-O is a registered trade-mark of General Foods Corporation

In minutes – 10 different potato dishes from just one box!

It's the most versatile, time-saving potato product ever! Not small diced pieces –but real potato slices you can use in one potato dish after another: 1. potato salad (see above) 2. hash browned 3. lyonnaise 4. scalloped 5. au gratin 6. parsley 7. creamed 8. stews 9. soups 10. meat pies!

Just simmer Minute Sliced Potatoes for 15 minutes and they're ready for almost any potato use–and they won't darken as raw potatoes often do. The 2¼-lb. package makes 6 qts., so for accurate batch control, perfect whiteness and consistently firm texture, try Minute Sliced Potatoes this week! *Order from your wholesale distributor and ask him about . . .*

Minute Mashed Potatoes, too!

White, light, *delicious* mashed potatoes *anyone* can make in minutes! They stay just right even after long periods of time on the steam table. *Cost:* less than 2½¢ a serving–including butter and milk!

Minute is a registered trade-mark of General Foods Corporation

good seasons
Post CEREALS
LOG CABIN'S WIGWAM SYRUP
JELL-O GELATIN

NEW appetizing GEVRAL® Protein

VITAMIN-MINERAL-PROTEIN SUPPLEMENT LEDERLE

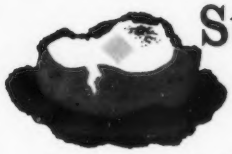
Recipes

Tomato Rarebit

(4 servings)

2 cups (½ lb.) grated Cheddar cheese
1–10½ oz. can condensed tomato soup
3 tbs. water • ½ tsp. salt
Few grains cayenne (optional) • 2 tbs. GEVRAL Protein

Combine ingredients, heat, stir frequently until cheese melts. Serve on toast or crackers.



Stuffed Baked Potato

(makes 4)

4 baked potatoes (3½" diameter) • 2 tbs. butter
2 tbs. grated onion (optional) • 2 tbs. hot milk
½ tsp. salt • ¼ tsp. paprika • 2 egg whites
½ cup (¼ lb.) grated Cheddar • 2 tbs. GEVRAL Protein

Cut hot potatoes and scoop out halves; mash thoroughly with GEVRAL Protein. Sauté onion in butter and add to pulp with milk, salt, paprika. Beat smooth. Beat egg whites stiff and fold in. Fill potato shells, sprinkle with grated cheese and broil slowly till cheese melts.

Cream Soup

(4 cupfuls)

2 tbs. butter or oleomargarine • 1 tbs. minced onion
1½ tsp. flour • ¼ tsp. salt • ⅛ tsp. paprika
1 cup milk • 1 cup bouillon or vegetable water
1 cup puréed vegetable • 2 tbs. GEVRAL Protein

Melt butter, add onions, sauté 5 min. Blend in flour, salt, paprika. Stir in milk and soup base slowly; heat to boiling. Add purée and reheat to boiling. Make GEVRAL Protein paste with a little soup; add to soup and mix.

Fruit Whip

(4 servings)

⅔ cup fruit pulp • 2 egg whites • ¼ tsp. salt
3 tbs. sugar • 1 tbs. lemon juice • 2 tbs. GEVRAL Protein

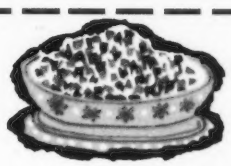
Pulp cooked fruit, or use baby-junior fruits (prunes, peaches, apples). Mix slowly, thoroughly with GEVRAL Protein. Beat egg whites stiff with salt; add sugar gradually, beat glossy. Fold in fruit, and lemon juice. (For 1 serving, mix all then add 1 portion gradually to GEVRAL Protein.

Fruit Sherbet

(4 servings)

1 cup junior pear & pineapple, canned
½ cup orange juice • ½ cup fine sugar
1 cup evaporated milk, undiluted
Few grains salt • 2 tbs. GEVRAL Protein

Combine fruit with GEVRAL Protein. Add juice, sugar, milk. Stir until sugar dissolves. Place in tray in freezer with control at coldest. Stir once after ½ hour. Freeze firm.



Cereals

2 tbs. GEVRAL Protein
¾ cup Cream of Wheat or 1 cup Oatmeal

Add GEVRAL Protein to cooked cereal. Or add to whole or skimmed milk over dry cereals.

Pine-Nog

(1 cup serving)

1 cup pineapple juice, canned or frozen (diluted)
1 egg • 2 tbs. GEVRAL Protein

Combine juice and egg. Gradually mix with GEVRAL Protein and stir or blend until dissolved.

Baked Custard

(4 servings)

¼ cup sugar • ¼ tsp. salt • 3 eggs • 2 cups milk
1 tsp. vanilla • 2 tbs. GEVRAL Protein

Combine sugar, salt, GEVRAL Protein: stir in beaten eggs. Add milk slowly and mix well. Add vanilla. Pour in cups and set in pan of hot water. Bake at 325° F. for 30-40 minutes or until custard sets.

Milk and fruit juices

(single ½ cup serving)

Make paste with 2 tablespoonfuls GEVRAL Protein and small amount selected liquid (whole or skim milk, tomato juice, orange juice, chocolate milk). Add remaining liquid and mix thoroughly.

Excellent for High-Protein Tube Feeding

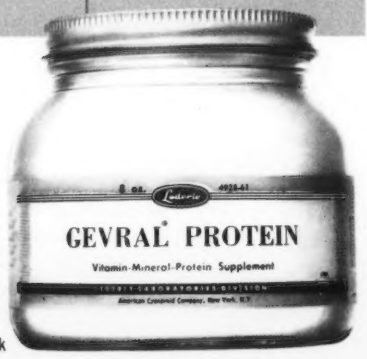
GEVRAL® Protein

VITAMIN-MINERAL-PROTEIN SUPPLEMENT LEDERLE

60% protein plus 26 vitamins and minerals for complete, convenient feeding

FORMULA & ANALYSIS

	High Volume Formulas (Normal Sodium Content)		
	Formula #1	**Formula #2**	**Formula #3**
BASIC INGREDIENTS:			
GEVRAL PROTEIN	60 Gm. (2 oz.)	60 Gm. (2 oz.)	60 Gm. (2 oz.)
WHOLE MILK	1 Qt.	1½ Pt.	1 Pt.
NON-FAT MILK POWDER	3 cups (405 Gm.)	2 cups	1 cup
WATER (To Volume)	2000 cc.	1330 cc.	665 cc.
TOTAL VOLUME	**2000 cc.**	**1330 cc.**	**665 cc.**
PROTEIN	214 Gm.	158 Gm.	101 Gm.
CALORIES	2340	1686	1031
SODIUM	2.67 Gm.	1.84 Gm.	1.00 Gm.
CARBOHYDRATE	272 Gm.	190 Gm.	108 Gm.
FAT	43 Gm.	32 Gm.	22 Gm.
VITAMINS:			
Vitamin A	6720 Unit	6278 Unit	5834 Unit
Vitamin D	543 Unit	532 Unit	521 Unit
Thiamine (B_1)	6.8 mg.	6.2 mg.	5.7 mg.
Riboflavin (B_2)	14.6 mg.	11.5 mg.	8.5 mg.
Niacin	20.4 mg.	18.7 mg.	16.9 mg.
Pyridoxine (B_6)	3.2 mg.	2.3 mg.	1.5 mg.
Calcium Pantothenate	22.4 mg.	16.8 mg.	11.3 mg.
Folic Acid	1 mg.	1 mg.	1 mg.
Vitamin B_{12} with Intrinsic Factor	2/15 Unit	2/15 Unit	2/15 Unit
Vitamin B_{12} (Additional)	25 mcgm.	16 mcgm.	8 mcgm.
Choline	833 mg.	581 mg.	328 mg.
Inositol	900 mg.	616 mg.	333 mg.
Ascorbic Acid (C)	88 mg.	76 mg.	64 mg.
Rutin	25 mg.	25 mg.	25 mg.
Vitamin E	10 I.U.	10 I.U.	10 I.U.
Lysine	16.4 Gm.	12.3 Gm.	8.1 Gm.
MINERALS:			
Calcium	7.26 Gm.	5.22 Gm.	3.17 Gm.
Phosphorus	5.20 Gm.	3.58 Gm.	1.97 Gm.
Iron	13.4 mg.	12.3 mg.	11.3 mg.
Fluorine	0.6 mg.	0.4 mg.	0.3 mg.
Copper	1.5 mg.	1.3 mg.	1.1 mg.
Iodine	0.2 mg.	0.2 mg.	0.2 mg.
Potassium	5.9 Gm.	4.1 Gm.	2.2 Gm.
Manganese	1 mg.	1 mg.	1 mg.
Zinc	31.5 mg.	22.1 mg.	12.9 mg.
Magnesium	600 mg.	390 mg.	210 mg.
Boron	0.1 mg.	0.1 mg.	0.1 mg.



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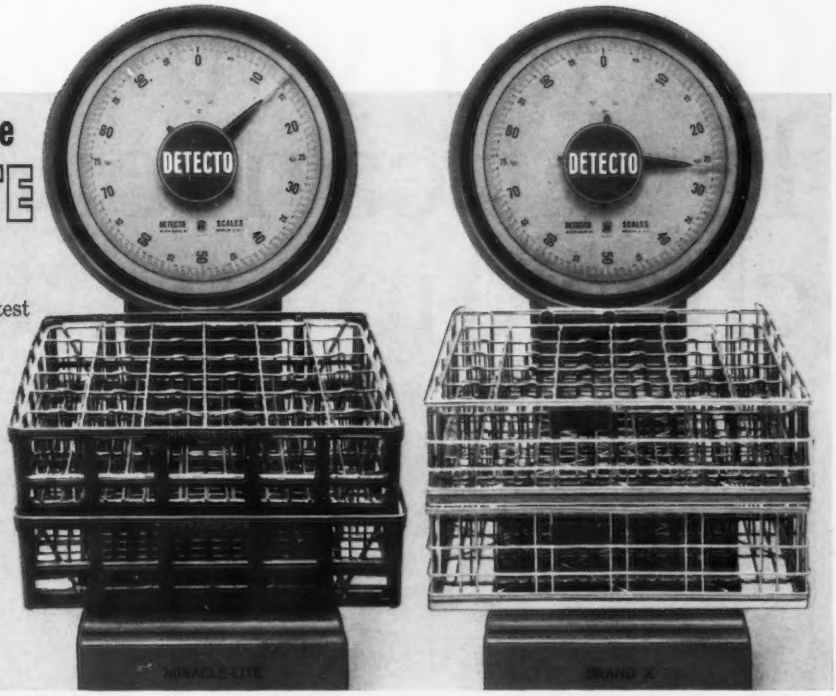

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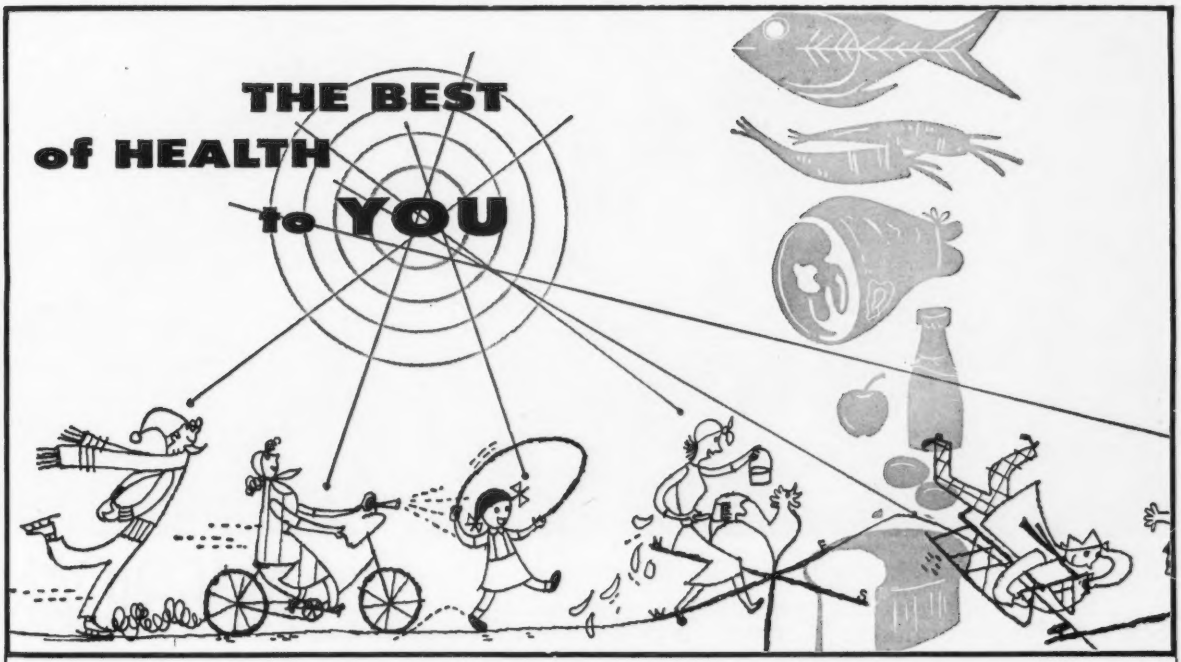

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Mary I. Barber, Editor

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Chapters 15 through 19 cover the history of dietitians in military and government service, the United States Children's Bureau and the role of the Journal of the ADA and the Association's Public Relations Department. Chapter 20 relates the challenging aspects of dietetics in the Space Age.

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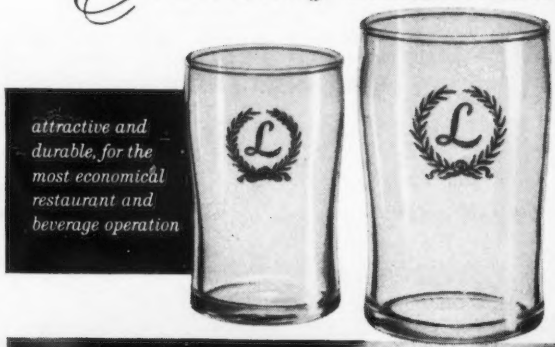

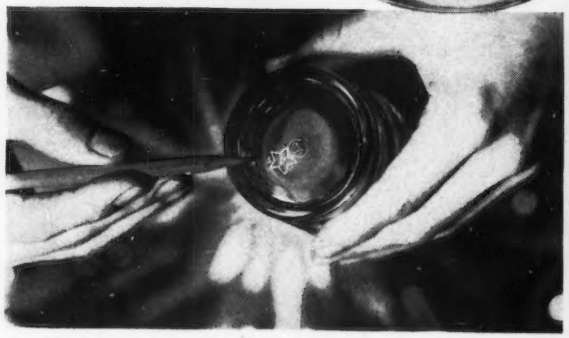

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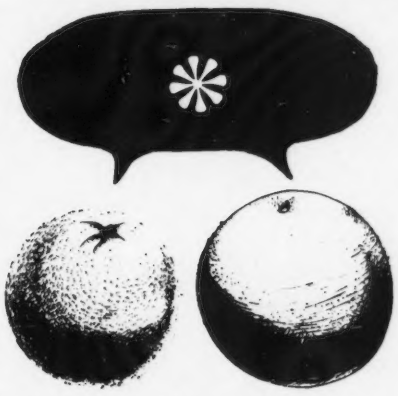

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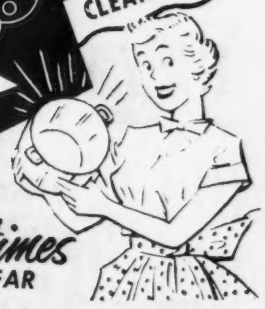

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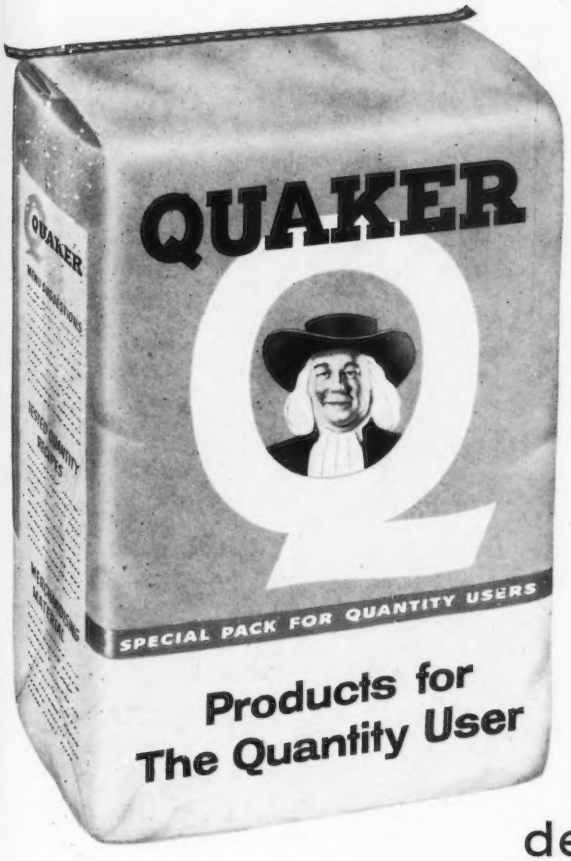

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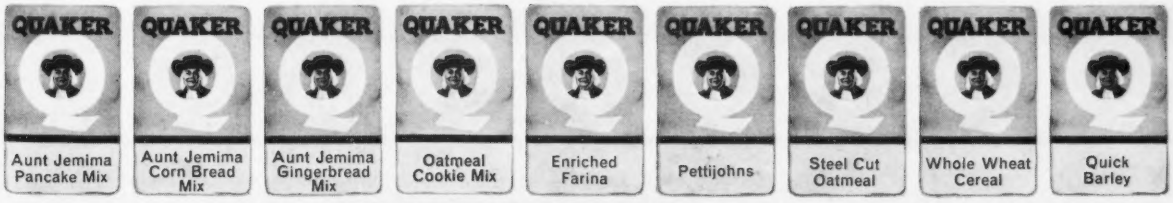

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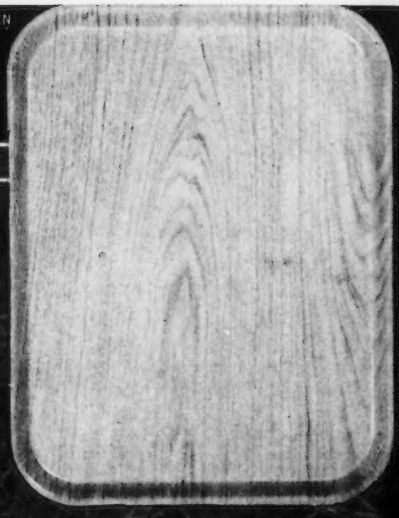

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